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Netherlands advanced: Building a future labor market that works

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June 2024

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EXECUTIVE SUMMARY

Netherlands advanced: Building a future labor market that works

The Netherlands has high ambitions for living standards, housing, healthcare, education, and the environment, requiring higher productivity growth through technology and a "train of job transitions."

This report is a collaborative effort by Dieuwert Inia, Hagar Heijmans, Marc de Jong, Reinout Goedvolk, and Sven Smit, with Alexander Veldhuijzen, Martijn Repko, and Wouter van Aanholt.

For many years, the Netherlands has enjoyed a robust economy and strong workforce. With a vast active workforce of 9.6 million people (out of a population of 17.6 million),[1] the country has one of the highest employment rates[2] and workforce productivity rates in the European Union.[3] Globally, it ranks fifth for competitiveness,[4] sixth for happiness,[5] ninth for social progress,[6] and tenth on the UN Human Development Index.[7]

However, ongoing trends are putting pressure on the labor market and could hamper the country's ability to reach its social and economic goals. Most notably, an aging population due to low birth rates and declining productivity growth are causing tightness in the labor market.[8] Meanwhile, increasing inequality in terms of income and labor conditions,[9] signs of declining quality in education,[10] and increasing prevalence of mental and physical health issues[11] put further pressure on the market.

This report builds on numerous publications to provide an outlook on the implications of these trends for the Dutch labor market. It adds a granular

forecast for 2030 and shows that to realize a 2030 labor market that works for the future of the Netherlands, two levers are essential: increasing productivity by investing in technological innovation, and realizing a "train of job transitions" through reskilling and upward development to move people to the (higher-productivity) jobs demanded. Last, it proposes priorities for an orchestrated action plan for three critical shortage areas to get the train moving.

Projections for the Dutch labor market in 2030

While demands on the workforce are rising, the supply of labor is not. The result is a growing tightness in the labor market, marked by an increased number of job openings per unemployed person.[12] The tightness in the labor market has increased in the past ten years (with the COVID-19 pandemic stalling this trend only temporarily). By 2022, 54 percent of employers were struggling to attract new employees,[13] and as of first quarter 2024, there were 110 vacancies per 100 unemployed people.[14]

According to our projections for 2030, a modeled scenario with continuation of the demand growth coming from historic GDP growth (1.6 percent CAGR from 2010 to 2022)[15] combined with the low productivity growth of the same period (0.4 percent CAGR)[16] and limited increase of the working population would triple the tightness in the labor market, resulting in a labor shortage of 1.4 million people, or a demand for 390 people per 100 unemployed. This is the result of historic labor demand growth on top of the vacancies in 2022 due to economic growth (more than 940,000) and societal ambitions (more than 280,000) compared with a projected labor force increase of 250,000. If the increased demand is fulfilled, it could result in a GDP growth of slightly more than 2 percent per year. Conscious socioeconomic choices regarding sector-specific policies, investments, and subsidies could lower the labor shortage to 0.9 million or increase it to 1.8 million. These choices would not solve the structural shortage, but they are still vital. Pressure on the market is likely to force the market to settle, potentially on suboptimal scenarios that could affect multiple factors such as broad prosperity or economic growth.

Technological innovations that could decrease the pressure on the labor market could shift demand toward jobs that require more-advanced skills. In a scenario with 1.8 percent productivity growth per year, based on the slower Europe scenario from the report *A new future of work: The race to deploy AI and raise skills in Europe and beyond*,[17] 150,000 jobs are expected to disappear in segments with declining demand and 400,000 are expected to be gained in segments with increasing demand between 2022 and 2030. Overall, jobs are projected to move from basic- and intermediate-skill work to advanced-skill work, particularly among knowledge workers (Exhibit E1).

Existing shortages are likely to increase, in particular in three critical areas of work: skilled manual labor, digital and tech jobs, and health and social care. The Netherlands could face shortages in these areas of work of 100,000, 105,000, and 245,000 people, respectively. New inflow will likely not fill the high demand in these specific shortage areas. This means people who are already in the market will have to fill these jobs, requiring increased mobility within the labor market. Most people will not be able to transition directly from areas with oversupply to

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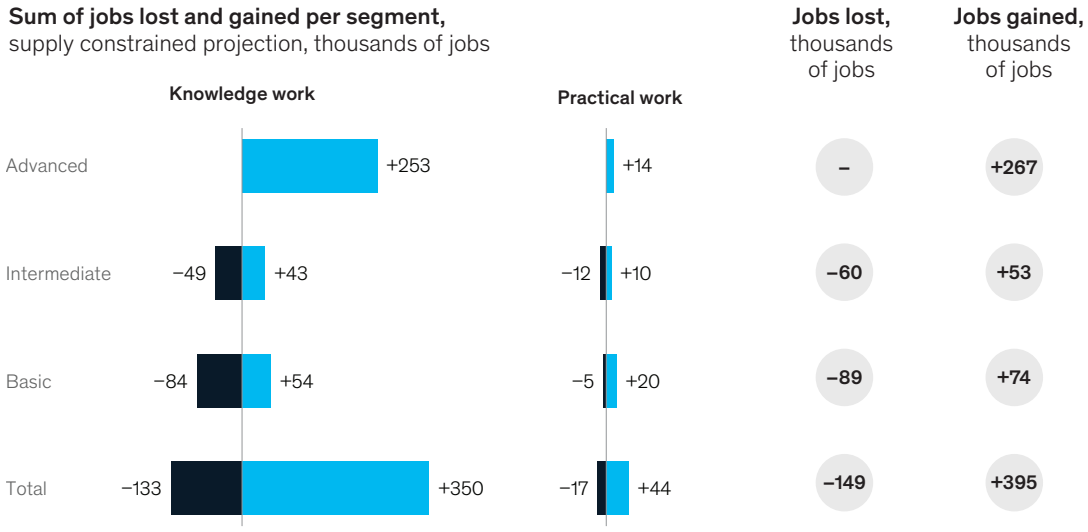
Exhibit E1

The labor market is projected to change dramatically from 2022 to 2030, in terms of both skill level and type of work.



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those with shortages, because their skills will often not align with areas of work that have increasing job openings. To create a labor market that works for the future, the Netherlands needs a "train of job transitions" in which multiple people learn new skills and shift roles to fill open needs (Exhibit E2). This combines lateral reskilling and upward and continuous development to transition workers into higher-productivity jobs. The annual number of people who need to be reskilled is projected to multiply by 1.4 compared to the period from 2010 to 2020, with the average number of professions per career rising from 1.9 to 2.4.

In addressing the tightness in the labor market in these ways, two paradoxes arise. While shortages should give companies incentives to onboard new people, train people, improve productivity, and implement solutions and innovations, the pressure caused by tightness could propel people and organizations in the opposite direction, resulting in higher obstacles to participation, more labor market dropouts, and less mental capacity or time for technological solutions. In addition, a tight labor market could diminish the incentives for workers to up- and reskill because there are plenty of job opportunities, while according, to our analysis, the rate of up- and reskilling should actually increase. Breaking through these paradoxes needs to be a priority.

What needs to happen: Transforming the labor market

Deliberate choices are required to build a future labor market with enough people and the right skill sets to fulfill demand and realize the country's ambitions. This will require joint action to resolve the tightness and get the train of job transitions moving. Four elements are essential to uphold the Netherlands' societal ambitions: increasing productivity, further optimizing participation, increasing labor market mobility, and enhancing people's fitness to work. The first two elements quantitatively reduce overall labor market tightness, and the latter two ensure that the labor force is capable of fulfilling demand.

Increasing productivity could reduce the labor shortage by 85 to 90 percent, while continued efforts to optimize workforce participation could account for the remaining 10 to 15 percent. This

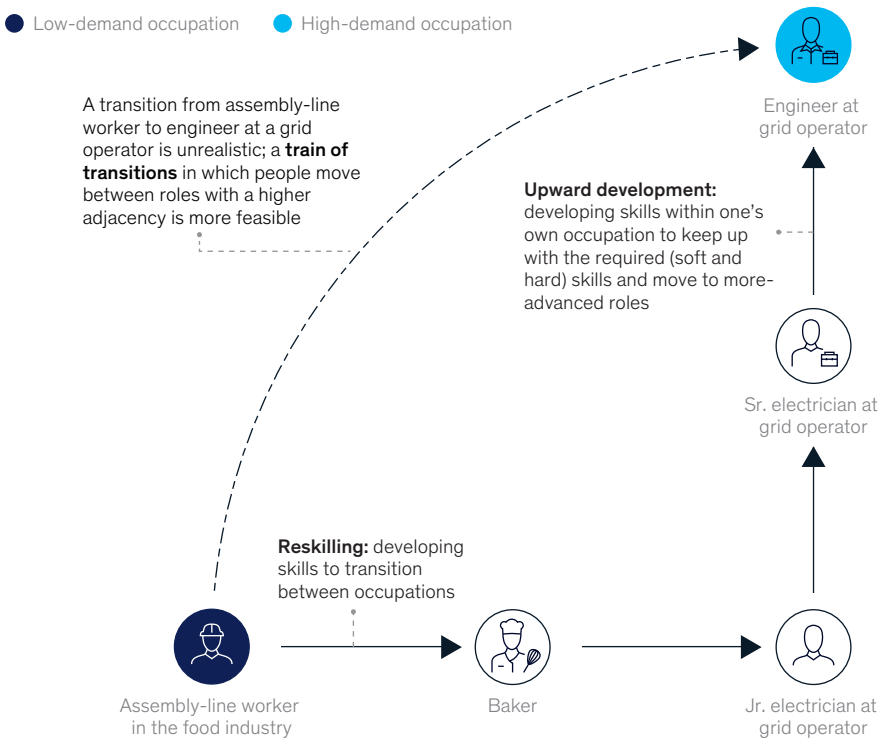
would reduce the projected labor shortage in 2030 from approximately 1.4 million people to 100,000 to 200,000 and reduce labor market tightness to below 50 people per 100 unemployed (Exhibit E3).

Increasing productivity. To reduce labor market tightness, an increase in productivity is essential. According to our calculations, accelerating the adoption of technological innovations—that is, automation, digitalization, and traditional and generative AI—can quadruple productivity growth to 1.8 percent from 0.4 percent per year, reducing the labor shortage by about 1.1 million people at an aggregate level by 2030. This is an ambitious goal, but it can be achieved with substantial investments in people, organizations, and technology. In today's tight labor market, increasing productivity through technological innovations has multiple advantages: it helps create economic growth, it makes industry more competitive, and it relieves tightness in the market, thereby reducing pressure on the workforce. Adoption of technological innovations is relevant for all sectors. On average, 15 percent of activities across sectors in the Netherlands could be automated from 2022 to 2030 in this ambitious yet achievable automation adoption scenario. Furthermore, in addition to increasing productivity within jobs through technological innovation, overall productivity in the Netherlands will also be increased if people move from lower-productivity toward higher-productivity jobs through reskilling and upward development.

Achieving this productivity growth through technological innovations will require sizable investments. There are indications that the current stagnation in labor productivity may in part be caused by lagging investments in R&D and labor-reducing technologies.[18] In 2022, Dutch investments in R&D amounted to 2.3 percent of GDP. To reach the EU ambition of 3 percent of GDP and keep up with the global playing field, the Netherlands would need to increase its investments in R&D by more than €6.7 billion annually.[19]

Exhibit E2

A train of job transitions could help fill jobs with high demand.



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Optimizing participation. Optimizing workforce participation—mainly by enabling people who are willing and able to continue working past retirement age and by supporting part-time workers in working more hours—could build on the progress that has already been achieved to help reduce labor shortages by about 100,000 to 200,000 people by 2030. This would be a two-percentage-point increase on top of the three-percentage-point increase achieved between 2018 and 2022.[20] While this impact is smaller than the potential of productivity increases, it's an important part of the solution to the labor shortage.

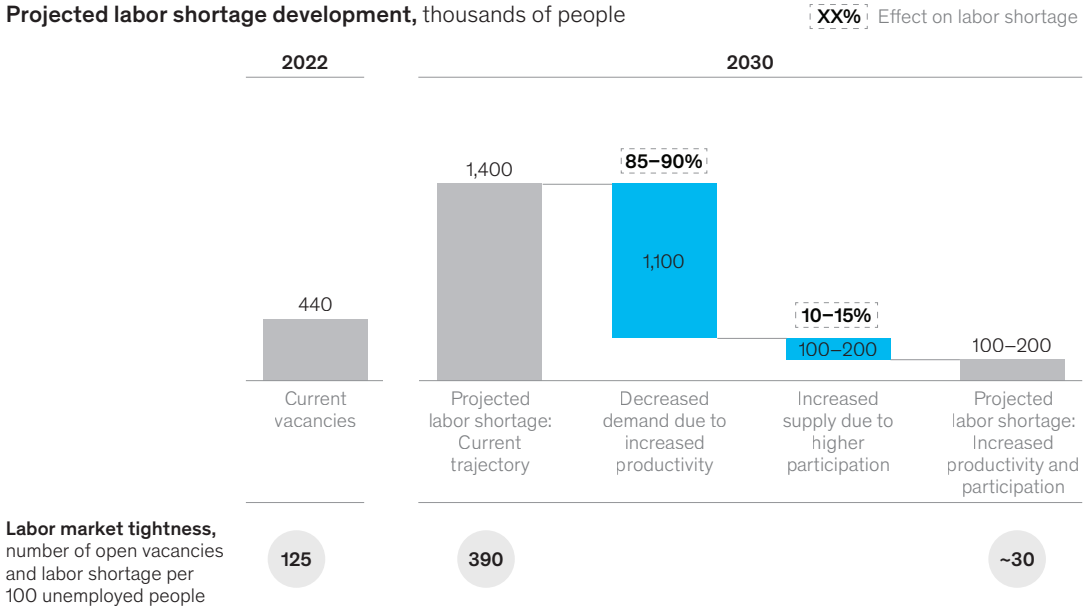
Increasing labor market mobility. Increased mobility is essential to realize ambitions for productivity and participation and to match supply and demand at a granular level. The rate of both reskilling and upward mobility will need to increase, which will require structural changes as well as cultural change.

Three pairs of structural changes could help get the train of job transitions moving at speed. Establishing infrastructure to guide people in career changes and reskilling (such as regional work centers) and adopting skills-based recruitment practices could help move talent toward the right opportunities. Apprenticeship-based learning approaches—to move people into paid work more quickly—and financial support for reskilling during the time spent training could help lift the financial hurdles inhibiting the transition from one job to the next. Finally, improving how reskilled individuals are integrated into their new roles and embracing continuous development in organizations are essential to ensure that people can be successful in their new jobs.

Cultural changes are required in practices and thinking about work and learning. Society has to adapt to a new reality in which the majority of people will switch professions at some point in their working lives, perhaps more than once.

Exhibit E3

Increasing productivity and participation in the workforce are critical to resolving labor market tightness.



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Society has to adapt to a new reality in which the majority of people will switch professions at some point in their working lives, perhaps more than once.

Existing initiatives do not yet have the scale or interconnections to solve this problem.

Enhancing fitness to work. Fitness to work is the ability to show up for work in good physical and mental shape with the appropriate skill set for the job. To maintain and enhance fitness to work in the coming decade, learning should be structurally embedded in each job. Our belief, based on discussions with a broad set of stakeholders, is that about 5 percent—or on average two hours per full-time week—of working time should be dedicated to learning and that this time should be built in as a core part of work. Furthermore, it remains important to safeguard the physical health of workers. Employers in physically demanding industries have a responsibility to maintain workers' health—for example, by designing career paths that support employees in making timely transitions to less physically demanding or straining work within or outside the organization. Given the trend of rising stress levels, a focus on improving mental health is also required.

Where to start: An orchestrated action plan

The changes described above are significant. These demand new mindsets, cultures, practices, and infrastructure. Many initiatives to contribute to this transformation are already under way. At the same time, high labor shortages in certain areas that are crucial to realize societal ambitions are expected to remain without more targeted and comprehensive action at higher speed and scale.

An orchestrated action plan to address existing shortages in three areas of work that are critical to the Netherlands reaching its ambitions—skilled manual labor (especially for housing and the energy transition), digital and tech, and health and social care (especially in nursing and elderly care)—could get the train of job transitions moving.

Although the relative impact of various levers differs among areas of work, four levers stand out. First, more incentives and active conversations could help direct students toward pre-occupational education for high-demand professions. Second, reskilling could be a major source of inflow, especially into health and social care and skilled manual labor. Additional actions to lower the barrier to transition could include creating regional collaborations between organizations in search of skilled labor and those from adjacent sectors with labor abundance; scaling up public, private, and in-company education; and fostering collaboration between larger companies and small and medium-size enterprises. Third, developing solutions to improve worker retention, especially in health and social care—for example, through improved onboarding—could help ensure that new entrants stay long term. Finally, developing the existing workforce to fill demand for more advanced skills—for example, through collaboration with educational institutions or in-house academies—could improve upward mobility.

There is an urgency to act now with speed and scale. The scale of the challenge requires a

comprehensive, orchestrated action plan for the next five years and beyond in which government, employers, employee organizations, educational institutions, and nongovernmental organizations collaborate to solve the pressing shortages in these three areas of work and catalyze the required labor market transformation toward 2030 and beyond.

The path that is outlined here for the Netherlands is no small undertaking; neither is it comprehensive. But it does suggest the scale of the effort and some of the critical steps for shifting the country's approach to skills, learning, and work to ensure that the Netherlands remains a great place to live and work—today and in the future.

Dieuwert Inia, Marc de Jong, and **Reinout Goedvolk** are senior partners in McKinsey's Amsterdam office, where **Hagar Heijmans** is a partner, **Alexander Veldhuijzen** is an associate partner, and **Martijn Repko** and **Wouter van Aanholt** are consultants. **Sven Smit** is chair of the McKinsey Global Institute and a McKinsey senior partner based in Amsterdam.

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[1] "Beroepsbevolking" ("Working population"), Centraal Bureau voor de Statistiek (CBS), May 15, 2024.
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[18] *Krappe arbeidsmarkt vraagt om keuzes: Deze beschouwing hoort bij het Centraal Economisch Plan 2024 (Tight labor market requires choices: This discussion document is part of the Central Economic Plan 2024),* Planbureau (CPB), February 2024.
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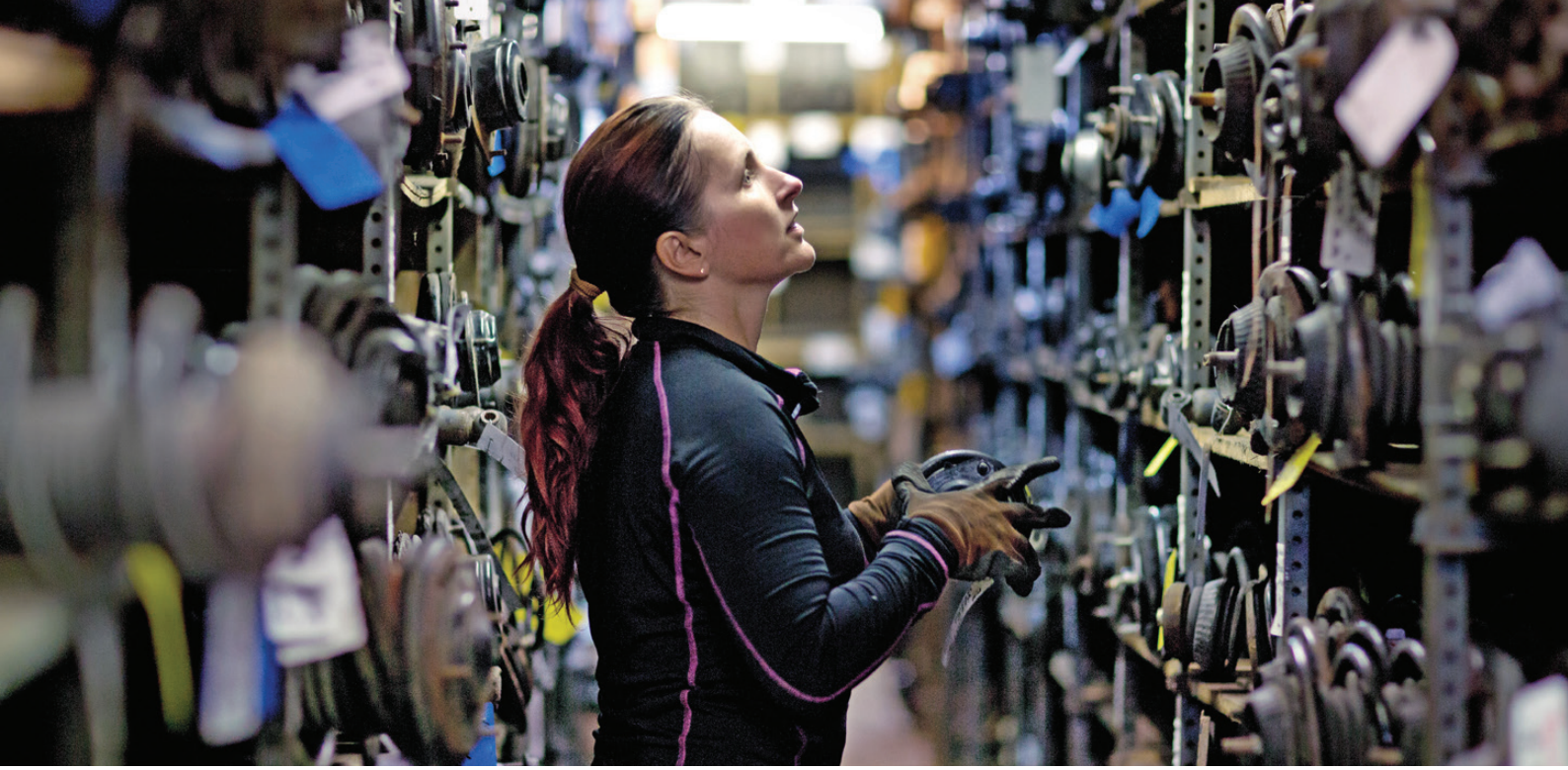

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INTRODUCTION

The Dutch labor market today

Work can be a source of meaning in people's everyday lives. It can make people feel that their efforts and talent really matter and make a difference to others and society. It gives structure to life and a path to personal growth and development, and it provides income to shape life and support family, friends, and passions.[1]

For many years, the Netherlands has enjoyed a robust economy and strong workforce. It has a stable and competitive market environment. It exports innovations and offers high-quality professional services and manufactured goods. And it is a hub for trade, financing, information technology, and high tech. As of 2022, the Netherlands had a vast working population of 9.6 million people (out of a total population of 17.6 million).[2] This is partially enabled by a substantial increase in the number of women in the workforce since 1973 (Exhibit 1).[3] In fact, the Netherlands has one of the highest labor force participation rates in the European Union,[4] behind only Iceland and Switzerland.[5] The Dutch labor market is also characterized by a significant share of part-time and independent workers (zzp'ers[6]); in 2022, 4.2 million people, or 46 percent of the employed working-age population, worked part-time, and in 2023, 1.2 million people, or 13 percent of the employed working-age population, worked independently.[7] For reference, within the European Union, 18 percent of employees work part-time and 10 percent are classified as independent workers.[8]

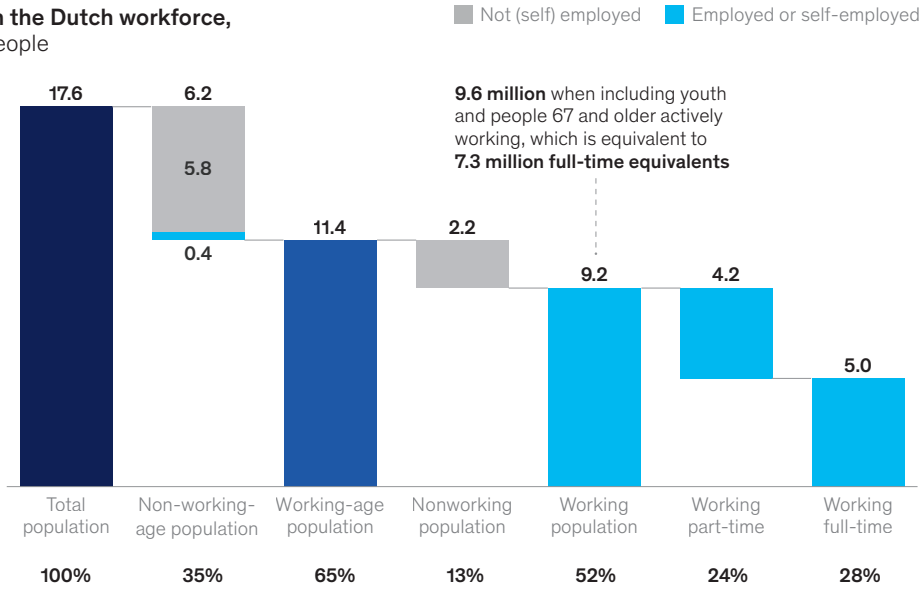
Indeed, the Netherlands has a dynamic economy, a highly productive workforce, and a high-quality and accessible education system.[9] These factors culminate in a great lifestyle and standard of living for its people: globally, the country ranks fifth for competitiveness,[10] sixth for happiness,[11] ninth for social progress,[12] and tenth on the UN Human Development Index.[13]

However, ongoing trends—such as the aging population and declining productivity growth[14]—could increase inequality and hinder the country's ability to reach its social and economic goals.

Exhibit 1

More than nine million people are working part- or full-time in the Netherlands.

Participation in the Dutch workforce, 2022, million people



Note: Includes migrant workers. Given that the Labor Force Survey questionnaire is available only in Dutch, it may underrepresent recent migrants and overrepresent migrants who have been living in the Netherlands for some time.
[1]This includes all people of working age, currently without a job. This includes unemployed people, early retirees, students, and people with a disability or illness or in a non-paying care role.
Source: Centraal Bureau voor de Statistiek (Statistics Netherlands) Statline Database

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These trends have already led to a tight labor market and are reshaping the workforce of the future, and they will lead to higher labor demand, especially in healthcare. However, at the same time, some workers will lose jobs to technological innovations, and in some cases, their skills will not align with jobs that are in increasing demand. Indeed, without action, the problem might not be a lack of jobs but a lack of people with the correct skills to fulfill all tasks and be more productive. In addition, increasing inequality between the lowest-income group and the rest of the population,[15] the signs of declining quality of the educational system,[16] and the increasing prevalence of mental and physical health issues[17] put further pressure on the workforce. As a result, public services such

Without action, the problem might not be a lack of jobs but a lack of people with the correct skills to fulfill all tasks and be more productive.

as maintaining the standards of care could be at risk, societal ambitions such as the construction of sufficient housing and the green[18] transition could be delayed, the country's leading position in high-tech industries could be at risk, and (perceived) inequality could grow as more people are, or feel, left out despite the rising demand for labor.

This report provides an outlook on the implications for the 2030 Dutch labor market and the dynamics shaping it. Building on an earlier McKinsey report, *A new future of work: The race to deploy AI and raise skills in Europe and beyond*,[19] it adds a more granular view on the Netherlands and suggests a pathway that could address the Dutch labor tightness. The report also builds on existing literature about the challenges facing the Netherlands' workforce—including reports from DenkWerk, the Netherlands Bureau for Economic Policy Analysis (CPB), and the State Committee on Demographic Developments 2050.[20] It shows that to realize a 2030 labor market that works for the future of the Netherlands, two levers are essential: increasing productivity by investing in technological innovation, and realizing a "train of job transitions" through reskilling and upward development to move people to the (higher-productivity) jobs demanded. Last, it proposes priorities for an orchestrated action plan for three critical shortage areas to get the train moving.

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[13] "Human Development Index (HDI)," United Nations Development Programme, accessed May 29, 2024.
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[16] PISA Database, OECD, accessed May 29, 2024.
[17] "Cijfers en trends – Werknemers" ("Figures and trends – employees"), TNO, accessed May 29, 2024.
[18] Includes all elements to achieve net-zero emissions and a circular and clean industry.
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1

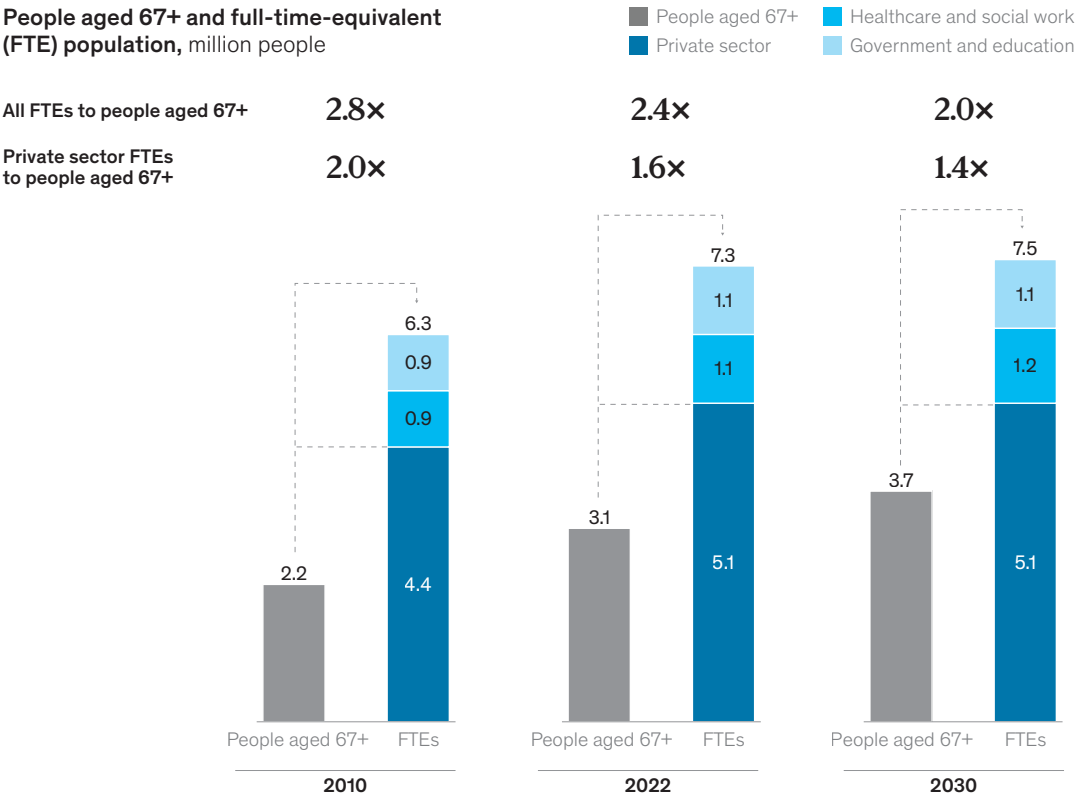
Projections for the Dutch labor market in 2030

Over the past several decades, the Dutch labor market has experienced some concerning developments. The aging population and declining productivity growth have already led to a tight labor market. Now, rising income inequality, signs of declining quality of education, and the increasing prevalence of mental and physical health issues are putting additional pressure on the market. If not addressed, these trends could have a significant negative impact on the overall labor market. Later in this chapter, we address the potential impact of the global trend of technological innovations—such as automation, digitalization, and traditional and generative AI (gen AI).

Aging population due to high life expectancy and low birth rates. The population of the Netherlands is rapidly getting older. In 2010, the average age was 40.1; by 2022, it had reached 42.4.[21] This trend is driven by high birth rates in the 1950s and 1960s, followed by persistently low birth rates since the 1970s, as well as a higher life expectancy.[22] As a result, the ratio of full-time-equivalent workers (FTEs) to people aged 67 and older has declined steadily since 2010 and is projected to continue to do so—particularly in the private sector (Exhibit 2). The aging population increases the pressure on the healthcare sector and on required state and private pension provisions. The private sector is fundamental to the government's ability to fund its ambitions[23]—in 2023, for example, the sector was responsible for paying and collecting 76 percent of all tax and social security contributions ("sociale premies") received by the Dutch government, totaling €293 billion (of the €386 billion collected in total). Thus, the declining rate of FTEs to people aged 67 and older puts pressure on the Netherlands' earning capacity.

Exhibit 2

The ratio of workers to people aged 67 or higher is decreasing.



Note: Figures may not sum, because of rounding.
Source: Centraal Bureau voor de Statistiek (Statistics Netherlands) Statline Database; McKinsey Global Institute analysis

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Declining productivity growth. Average labor productivity growth was two-thirds lower in 2010–22 than in 1995–2010, dropping from 1.3 to 0.4 percent per year.[24] This decline is in part a result of lower R&D investments and the shift of jobs from higher-productivity sectors (such as telecommunications and financial services) to lower-productivity sectors (such as healthcare and recreation).[25] A breakdown of productivity development shows that public sector productivity has been stagnant since 2010 and that private sector productivity growth declined to 0.5 percent per year since 2010 from 1.6 percent per year from 1995 to 2010 (Exhibit 3).

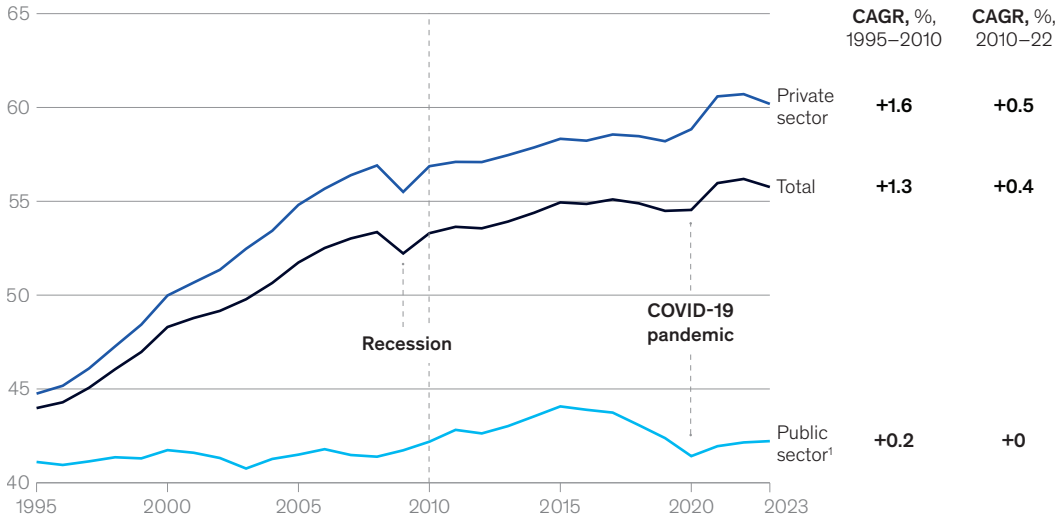
Increasing inequality in the population. Inequality refers to disparity in disposable income, job security, labor conditions, and educational opportunities between the lowest-income groups (approximately bottom 10 percent) and the rest of the population. This refers, for example, to the so-called working poor, such as home care professionals who work 24 hours per week earning as much as they would through social assistance benefits, or people working two jobs who are still dependent on food banks.[26] Organizations in the Netherlands have also increased their use of zzp'ers by about seven percentage points in the past 11 years.[27] This leads to decreased job security and limited access to benefits such as social security, which is of particular concern for lower-income groups.[28]

Signs of declining quality of the educational system. A high-quality education is foundational for a productive workforce and social mobility. Yet from 2009 to 2022, Dutch PISA scores[29] across basic skills (math, reading, and science) dropped 6 to 10 percent in the Netherlands compared with 2 to 4 percent in peer countries.[30] Additionally, as a recent report highlighted, the rigor of the country's central exams in math and science has declined in the past 30 years: 40 to 50 percent less content is covered in the math exams, and the questions on the exams are easier.[31] In the long term, this trend could affect the competitive position of the Dutch workforce compared with peers.

Exhibit 3

Labor productivity growth in the Netherlands is slowing and has been stagnant in the public sector.

Historic development of labor productivity in the Netherlands,
GDP per total hours worked, corrected for inflation, 2015 €



[1]Public sector refers to administration and government services, education, human health, and social work activities.
Source: Centraal Bureau voor de Statistiek (Statistics Netherlands) Statline Database

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Increasing prevalence of mental and physical health issues. A healthy workforce is essential to the well-being of the nation and its people. In 2023, employees in the Netherlands took an average of eight sick days.[32] According to national statistics, employees in healthcare, administration, and education were absent most often, averaging nine to 11 days per year.[33]

Psychosocial work-related health problems are also rising: for example, around one in five working people in the Netherlands have burnout symptoms, up from one in seven in 2014.[34] Without intervention, experts predict this could increase to one in three by 2030.[35] Similar trends are seen outside the workforce. For example, a recent study by RIVM found that 44 percent of students reported depression or anxiety symptoms, and similar percentages feel emotional exhaustion, often experience pressure to perform, or indicate significant stress and loneliness.[36]

Physical health issues also take a toll: people in physically demanding jobs expect to be able to work 1.7 years less, on average, than those whose jobs are not physically demanding.[37] Furthermore, 26 percent of Dutch workers (compared with 11 percent in Europe overall) sit more than 8.5 hours per day, which increases the chance of cardiovascular disease by 74 percent and premature death by 27 percent (compared with sitting less than four hours per day).[38]

Overall, the labor market is under pressure because of a combination of trends that cannot easily be reversed. Without action, these trends will persist. In the next two sections of the report, we explore the implications of these trends on the labor market and the challenges they present.

Labor market tightness is likely to increase

The above trends contribute to a growing tightness in the labor market, meaning there is an increased number of job openings per unemployed person. Managing tightness in the labor market is a balancing act between labor supply and labor demand. Labor supply is driven by growth in the working-age population (number of people) and participation levels (hours worked per person). Labor demand is driven by the combination of increasing public and private demand and productivity (delivering more output with the same number of people). The number of vacancies per 100 unemployed people can be a proxy of labor market tightness[39]: the market could be considered increasingly tight above 50 vacancies per 100 unemployed people.

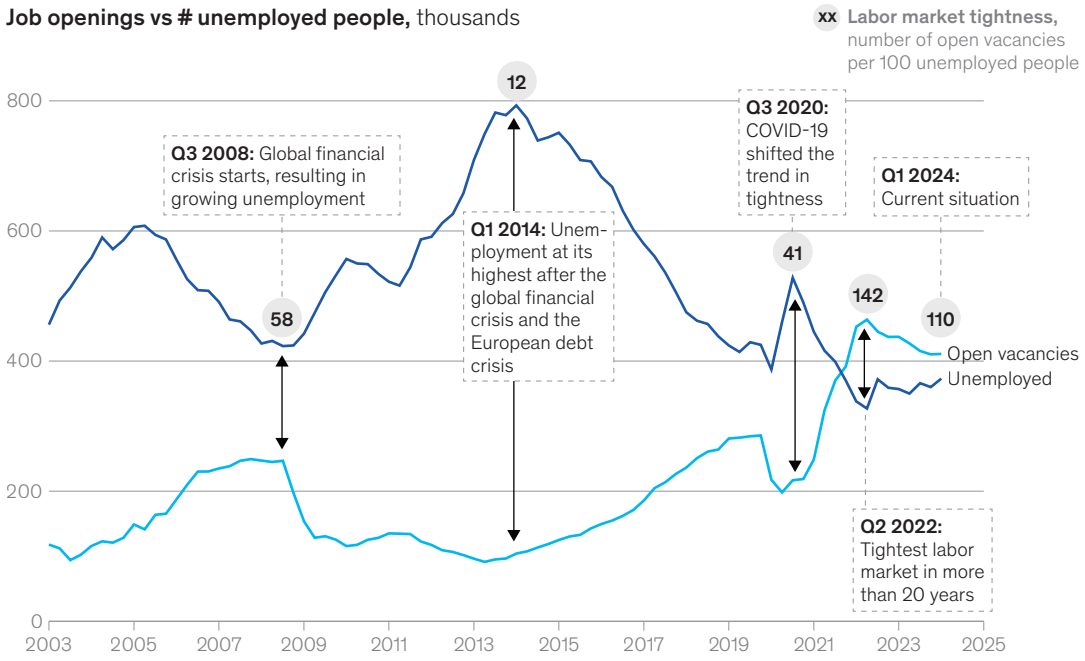
The labor shortage could increase to 1.4 million people

The tightness in the Dutch labor market has increased over the past ten years. The COVID-19 pandemic disrupted the trend, with vacancies dipping and unemployment spiking, but the disruption did not last. By 2022, more than half of employers were struggling to attract new employees, and second quarter 2022 had the highest labor market tightness in the past 20 years (Exhibit 4).[40] As of first quarter 2024, there were 110 vacancies per 100 unemployed people. Besides the numerical equation, a mismatch of capabilities and skill requirements contributes to at least the perception of a tight market. We surveyed chief human resource officers (CHROs) at some of the Netherlands' largest employers and found that about half are currently facing a labor shortage in specific areas or roles.[41]

Overall, the labor market is under pressure because of a combination of trends that cannot easily be reversed. Without action, these trends will persist.

Exhibit 4

There are currently more job openings than unemployed people in the Netherlands.



Source: "Tension on the labor market," Centraal Bureau voor de Statistiek (Statistics Netherlands), accessed May 16, 2024

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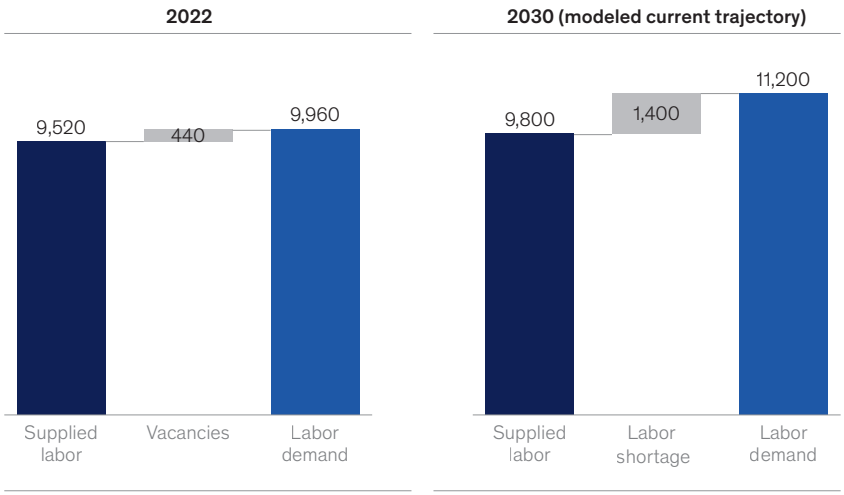
A tight labor market with a high number of vacancies can be beneficial for people who are working or seeking work: it indicates low unemployment, meaning that people have more options in finding a job that fits with their ambitions. However, there are also significant downsides. Labor shortages can lead to a range of issues, such as longer wait times in healthcare, students being sent home when a teacher gets sick and there isn't a substitute, and increased work pressure for those who are filling in the gaps.[42] Thus, increasing tightness should be avoided, especially over longer periods of time.

If productivity growth does not increase, by 2030 the labor shortage could increase to 1.4 million people and tightness could more than triple to a demand for 390 people per 100 unemployed (Exhibit 5). This increased shortage follows from the modeled effect of labor market developments toward 2030. Continued labor demand growth at 1.6 percent per year (following historic GDP growth) combined with productivity growth of 0.4 percent per year—the average growth rates since 2010—increases the existing shortage by 940,000 to 1.4 million. Societal ambitions, such as on healthcare, construction, high-tech industries, and the green transition, would further increase the shortage by 280,000 to 1.7 million. Finally, the projected labor force increase of 250,000 people—in line with the moderate population growth scenario as projected by the State Committee on Demographic Developments 2050—reduces the shortage to 1.4 million people.[43] If the increased demand can be fulfilled, it could result in a GDP growth of slightly more than 2 percent per year. Adjustment mechanisms in the economy are not considered. In this scenario where tightness triples, labor supply could hinder the country's ability to grow its economy and realize its societal ambitions. The challenge of labor market tightness is not unique to the Netherlands: especially since the COVID-19 pandemic, multiple advanced economies, including Canada and the United States, have experienced increasing rates of unfilled vacancies.[44]

Exhibit 5

Tightness in the Dutch labor market could increase by 2030.

Labor demand and supplied labor, thousands of people



Labor market tightness, number of open vacancies and labor shortage per 100 unemployed people

125

390

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Socioeconomic choices affect the labor shortage

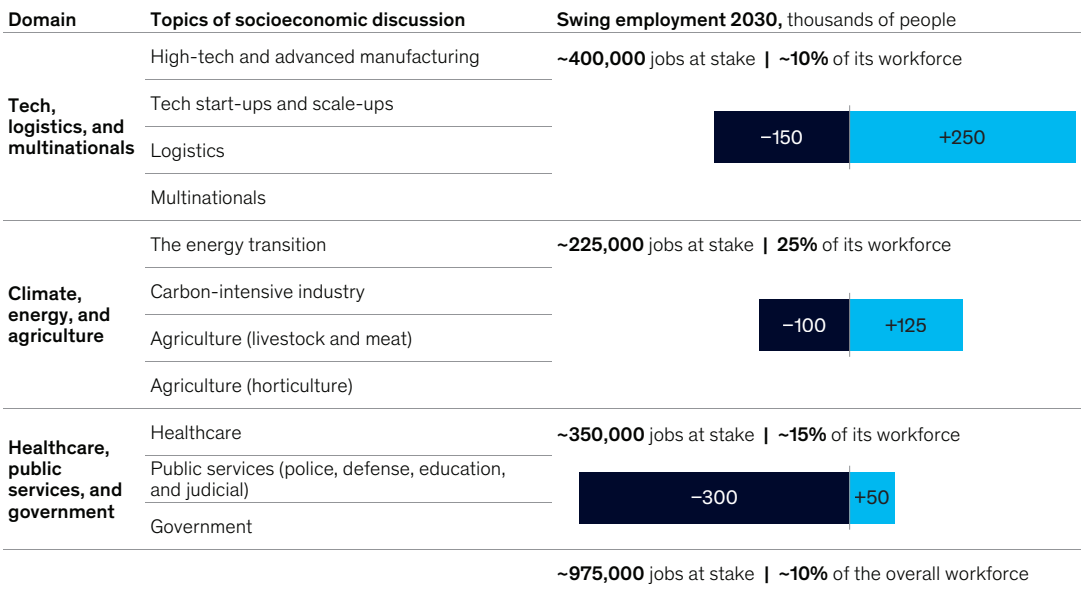
The socioeconomic decisions that governments and organizations make—in terms of policies, investments, and subsidies—have a significant impact on the Dutch economy. For instance, the debate over the extent to which the Netherlands should safeguard and stimulate the future of high-tech industries and advanced manufacturing could have a direct effect on the country's competitive positioning and thus its economy and labor market. The choices made regarding 11 key social and economic sectors could affect about one million jobs, or 10 percent of the 2030 workforce (ranging from 550,000 fewer jobs to 425,000 more), resulting in a labor shortage anywhere from 0.9 to 1.8 million people (see sidebar "Topics of socioeconomic discussion"). While these choices would not solve the entire problem of structural tightness, they can create additional demand.

Different sectors could be affected depending on the choices made (Exhibit 6). For example, in high-tech industries and advanced manufacturing, limiting investments can decrease demand by about 100,000 people but likely at the expense of economic growth. On the other hand, if investments were to be increased, labor demand could be raised by approximately 75,000 people, relative to the 2030 baseline projection, likely creating more economic growth but also increasing tightness. In healthcare, improving productivity through technological innovations or lowering the levels of care could decrease labor demand by about 250,000 people. In the logistics sector, increasing concerns about the impact of distribution centers on the landscape—"verdozing"—could limit further sector growth and reduce labor demand for workers with basic skills.

Conscious socioeconomic choices are vital. Pressure is likely to force the market to settle, potentially on suboptimal scenarios that could affect multiple factors such as broad prosperity, labor market shortages, or economic growth. Market demand could decrease while public sector demand remains unchanged, hindering the nation's capacity to create economic value. On the other hand, increased demand in the private sector could attract more talent, potentially magnifying shortages in the public sector (such as in healthcare). As a result, labor shortages in

Exhibit 6

Potential choices in key socioeconomic discussions could affect about one million jobs—10 percent of the workforce.



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elderly care could increase, meaning that fewer people could receive home care or that caregivers would have less time to spend with each patient.

Granular shifts in labor demand are likely to happen

Our projections suggest that the Dutch industry mix will change if productivity growth plays a significant role in resolving labor market tightness, likely requiring a comprehensive change in occupations, skills shifts, and capital reallocation.[45] For example, a higher rate of housing construction would push demand within construction; geopolitical instability may lead to an increased focus on strategic autonomy[46] and reshoring of industry.[47]

Technological innovations shift demand toward more advanced-skill jobs

Exhibit 7 provides a granular projection of the change in labor demand across occupation groups and skill levels in the Netherlands from 2022 to 2030. This is based on a model from the McKinsey Global Institute (MGI), as also used in its 2024 report *A new future of work: The race to deploy AI and raise skills in Europe and beyond*.[48] To understand potential changes in demand in each occupation, the model includes multiple drivers: automation adoption, the net-zero transition, e-commerce growth, remote work adoption, increases in income, aging populations, technology investments, infrastructure investments, marketization of unpaid work, new jobs, and increased educational levels. It is important to note that the projected change in labor demand is based on the assumption of 1.8 percent productivity growth per year, in line with the slower Europe scenario in the same 2024 MGI report (see chapter 2 of this report for further details). In the period from 2022 to 2030, we project 150,000 jobs to disappear in segments with declining demand and 400,000 jobs to be gained in segments where employment increases. Overall, jobs are projected to move from basic- and intermediate-skill work to advance-skill work, particularly among knowledge workers (see sidebar "Defining types of work"). The sectoral breakdown shows that most of the increased demand will likely come from healthcare and social work (increasing by approximately 182,000 jobs), driven by the aging population. Wholesale and retail is the only sector with significant decline in

Topics of socioeconomic discussion

Governmental and organizational choices regarding key social and economic sectors in the economy could have consequences for the Dutch labor market. For this report, we have estimated the potential impact of such choices on labor demand and supply in 11 sectors. Our assumptions are based on the perspectives publicly expressed in the discussions considering current government policy (Rutte IV), the party programs for the 2023 elections of the House of Representatives, and the opinions expressed in media and public debates. The 11 sectors are as follows:

1. *High-tech and advanced manufacturing.* To what extent should the Netherlands safeguard and stimulate the future of high-tech and advanced manufacturing in the country?

2. *Tech start-ups and scale-ups.* To what extent should the Netherlands safeguard and stimulate the future of tech-heavy service companies (such as fintechs, tech-driven travel solutions, and tech-driven start-ups) that can easily cross borders?

3. *Logistics.* To what extent should the logistics sector shrink, stay the same, or grow in the Netherlands, given the sector's contributions to economic prosperity but also the growing concerns related to its impact on the landscape ("verdozing")?

4. *Multinationals.* To what extent should the Netherlands safeguard the business climate for large multinational companies in the country?

5. *Energy transition.* To what extent should the Netherlands drive the energy transition in the country?

6. *Carbon-intensive industries.* To what extent should the Netherlands safeguard the future of carbon-intensive industries in the country?

7. *Agriculture—livestock and meat.* To what extent should the Netherlands maintain the current number of livestock in the country and the current size of related livestock processing industries?

8. *Agriculture—horticulture.* To what extent should the Netherlands maintain the current size of the horticulture industry in the country, given, for instance, its high dependence on low-paid labor?

9. *Healthcare.* To what extent should the Netherlands invest in significantly increasing productivity, increase employment in the sector, or adjust current levels of care?

10. *Public services.* To what extent should the Netherlands expand public services such as police or education?

11. *Government.* To what extent should the Netherlands increase or decrease the number of policy makers and civil servants?

demand (decreasing by approximately 51,000 jobs), driven by technological innovations and the sustained e-commerce evolution. Given the size of the sector, this still represents only a 3 percent decline compared with today.

A closer look at the occupations within practical and knowledge work reveals several specific trends (Exhibit 8). Within practical jobs, net shifts are relatively low. Only 2,000 practical jobs shift out of the intermediate-skill category, while occupations that require basic- and advanced-skill work gain jobs. Knowledge work shows a very large increase in demand for advanced-skill jobs, while demand for other skill levels declines compared with 2022. Healthcare workers are an exception to this trend, with demand set to increase across skill levels.

Existing shortages in three areas will continue to increase

While Exhibit 7 looks at the job market through a lens of *industry and skill level*, it is important to also examine shifts in the market from an *occupational* lens, as this will determine the need for reskilling. For example, the healthcare and social work sector includes doctors and nurses but also nonclinical roles, such as a financial controller for a hospital. These occupations will be affected differently in the coming years. Therefore, we created *areas of work* by combining similar occupation groups that stretch across sectors and skill levels. Specifically, the focus is on five areas of work that are affected most or are facing high shortages. Skilled manual labor, digital and tech jobs, and health and social care are the areas facing shortages, while our projections

Exhibit 7

From 2022 to 2030, jobs are projected to move from basic- and intermediate-skilled work to advanced-skilled work.

Workforce size, 2022, thousands of people
Low — High

Workforce growth, 2022–30, thousands of people
Decrease — Increase

Sector	Group	Practical work			Knowledge work			Total
	Skill level	Basic	Intermediate	Advanced	Basic	Intermediate	Advanced	
Agriculture, forestry, and fishing		33	46	3	60	14	9	164
		+1	–2	0	0	0	0	–1
Manufacturing, energy, materials, and utilities		146	215	77	148	164	219	969
		0	–9	+2	–6	–1	+20	+6
Construction		51	171	16	96	49	44	427
		0	+6	+1	0	0	+4	+11
Trade and transport		201	34	26	104	57	44	465
		+19	0	0	–2	–3	+4	+18
Wholesale and retail		261	76	55	562	338	164	1,456
		–1	0	+2	–58	–5	+12	–51
Leisure, hospitality, and other services		384	102	75	109	118	95	882
		–1	+2	+3	0	–3	+5	+6
Administrative and support services		139	42	10	54	82	81	407
		–1	–1	0	–2	–6	+5	–5
Professional, financial, insurance, and knowledge services		59	70	115	79	469	926	1,717
		–1	+1	+5	–6	–22	+96	+72
Healthcare and social work		116	8	32	270	612	605	1,643
		+1	0	0	+54	+43	+84	+182
Education and government		59	59	34	70	399	768	1,389
		0	0	+1	–8	–10	+24	+6
2022 Total		1,448	823	442	1,552	2,299	2,955	9,520
Delta to 2030		+15	–2	+14	–30	–5	+253	+245
Shrink segments		–5	–12	0	–84	–49	0	–149
Growth segments		+20	+10	+14	+54	+43	+253	+395

Note: Figures may not sum, because of rounding.

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Defining types of work

We have divided occupations into two categories: predominantly practical work, which includes trade jobs, services, and creative professionals (such as order pickers, police officers, and welders), and knowledge work, which includes desk jobs and healthcare services (such as call-center workers, logistical planners, and doctors). We also classified each occupation by skill level (basic, intermediate, or advanced) based on workers' level of education, experience needed, and risk involved. For example, a paver would be classified in basic skills, the project planner for the reconstruction of the street in intermediate skills, and the urban planner designing the future outlook of the city in advanced skills.

Exhibit 8

From 2022 to 2030, net shifts in practical jobs will be relatively low, while knowledge jobs will move toward advanced-skilled work.

Workforce size, 2022, thousands of people
Low — High

Workforce growth, 2022–30, thousands of people
Decrease — Increase

	Skill level	Occupation groups	Workforce size, 2022	Workforce growth, 2022–30	Workforce size, 2022	Workforce growth, 2022–30
Practical work	Basic	Blue-collar workers and manual laborers	483	+34	1.448	+15
		Client service and community service workers	966	–19		
	Inter-mediate	Specialized manual laborers	442	+11	823	–2
		Client service and entertainment specialists	124	+4		
		Public-safety specialists	56	0		
		Machinery and equipment operators	202	–16		
	Advanced	Creative professionals	220	+9	442	+14
		Skilled trades and expert technicians	145	+4		
		Community, transportation, and social service professionals	76	0		
Knowledge work	Basic	Health and public service aides (incl low-tier supervisors)	253	+65	1.552	–30
		Office, IT support workers, low-tier supervisors, and low-tier sales workers	1,299	–94		
	Inter-mediate	Health assistants and technicians	504	+55	2,299	–5
		Inspectors, legal assistants, and education assistants	247	+2		
		STEM and IT technicians	197	+13		
		Midtier business workers, midtier managers, and specialized office support workers	1,351	–75		
	Advanced	Health professionals	547	+83	2,955	+253
		Academia and education professionals	496	+2		
		STEM and IT professionals	748	+109		
		Business professionals, law professionals, and high-tier managers	1,165	+59		

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suggest that jobs in basic- to intermediate-level business professions and predictive manual labor could decline. Inflow in the latter is currently high, and slowing inflow over the next several years could gradually decrease the number of people for these jobs, thus avoiding significant oversupply of people. We expect the first three areas of work to experience continued shortages.

Skilled manual labor. This group includes pipelayers, electricians, sheet metal workers, and other skilled workers. We project that by 2030, this group will experience a shortage of 100,000 people, which is 16 percent of 2030 demand in this area of work. There is already a shortage of these workers, but the projected 2030 shortage is about two times higher than the current vacancies.[49] This is caused by an increase in demand (partly because of the green transition) combined with an expected net outflow caused by (early) retirements because of the physical strain of the work and the relatively advanced age of the working population.

Digital and tech. We project this group of workers, including computer hardware engineers, statisticians, mathematicians, network architects, and data scientists, to face a 2030 shortage of

about 105,000 people, which is 10 percent of 2030 demand in this area of work. While there is a net inflow of people into the area of work, demand is expected to rise more rapidly than the inflow. Future shortages therefore will be about four times higher than current vacancies.[50]

Health and social care. We project that by 2030, this group of doctors, nurses, and other health- and social-care workers will experience a shortage of about 245,000 people—16 percent of 2030 demand in this area of work. The shortage is therefore approximately eight times higher than current vacancies.[51] This is caused by an increase in demand (due to the aging population) combined with an expected net outflow caused by high attrition (partly because of high work pressure).

A train of job transitions is needed

Historically, there have been many moments when a large number of jobs needed to be filled—for instance, around the year 2000, in response to large-scale adoption of online technologies.[52] New entrants into the job market have always played a significant role in filling such vacancies. Typically, these new entrants include recent graduates, older new entrants or reentrants to the labor market, and labor migrants.

In the coming years, filling vacancies will depend less on new entrants and more on internal labor market mobility, either within an organization or between employers. In 2021, approximately 110,000 new graduates and approximately 60,000 qualified labor migrants entered the workforce.[53] In 2030, the number of students leaving education is expected to remain stable while labor migration may be 35 percent lower, in line with the moderate labor migration scenario proposed by the State Committee on Demographic Developments 2050. Because the inflow is therefore likely to decline rather than increase in the coming years, it might become more difficult to meet the shifting demand.

According to our projections, by 2030, the equivalent of roughly 1.5 million jobs could be displaced in a scenario of increased productivity growth due to automation, corresponding to approximately 180,000 displacements per year. Between 2010 and 2020, there have been, on average, 210,000 switches of professional class per year (2.2 percent of the workforce). Assuming that the displacements by automation are additional to this historic level and that half of the people in these displaced jobs would need to switch professional class or develop upwards, we project the resulting number of annual switches in the labor market to increase to 300,000 per year (3.1 percent of the workforce).[54] As a result, the number of people to be reskilled and upward developed would multiply by 1.4. This means that, going forward, a worker would spend, on average, 24 years in a profession and hence have 2.4 professions during their career (switching professions 1.4 times per career). In comparison, this same worker in the period from 2010 to 2020 would spend 27 years in a profession and have 1.9 professions per career (or 0.9 switches) (Exhibit 9).

This increased switching rate could be explained by the fact that labor oversupply and shortages expected for 2030 do not match one-to-one: the people whose jobs disappear cannot move directly into new jobs because the new jobs will require different skills or skill levels. This is reflected in our survey of CHROs; about 60 percent indicated they face skills mismatches today, and 65 percent expect this challenge to worsen in the future. Indeed, the projected oversupplies and shortages are expected to continue to grow beyond 2030 as the drivers—aging population and low birth rate, the green transition, and technological innovations—persist.

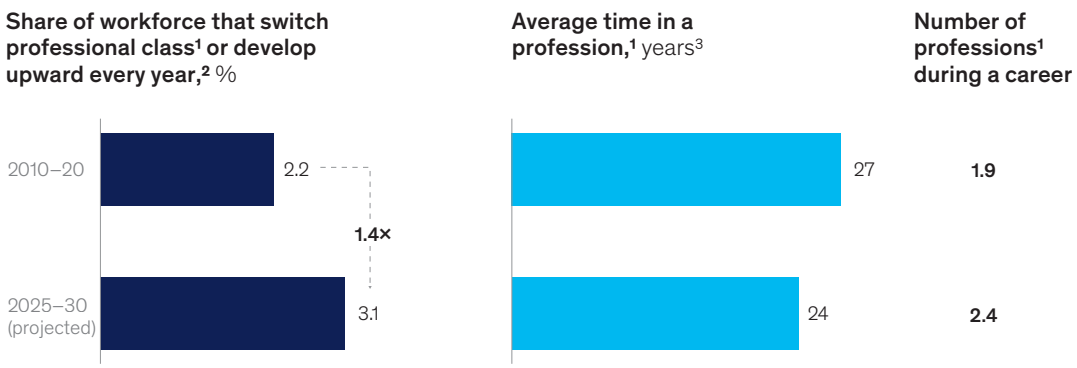
Solving this mismatch therefore requires a "train of job transitions" in which multiple people learn new skills and shift roles to fill open needs. Instead of one person transitioning directly from an area of oversupply to one with shortages, which might be a big leap, several people make a transition to an adjacent area of work, creating a "train" from the area with oversupply to the one with shortages. We address how to get this train running in parts II and III of this report.

The paradoxes of pressure and tightness in the labor market

All of the above challenges, except the role of socioeconomic choices, imply a need for improved productivity, optimized participation, skills shifts, improved physical and mental health, and an improved healthy lifespan. But

Exhibit 9

Annual reskilling is projected to increase 1.4 times by 2030.



[1]We follow the definition of "profession" as a given by Centraal Bureau voor de Statistiek (Statistics Netherlands).
[2]Excluding students (~38%) and people switching jobs within 2 years (50%).
[3]Average duration of working life is projected to increase by ~4 years, from ~40 (2015) to ~44 years (2025–30).
Source: Centraal Bureau voor de Statistiek (Statistics Netherlands); Eurostat; McKinsey analysis

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these factors also indicate a paradox. While there is a need to onboard and train new people, improve productivity and pursue other workforce solutions, and invest in skill shifts and health, this is not always possible because it also takes time and effort from people who are already short on time.

Tightness in the labor market also means people's workloads in sectors or roles with labor shortages are increased for prolonged periods—that is, they have to do the same work, or even more, while there are fewer workers. Increased workload is a risk factor for employee health. When people are overworked, they are more likely to miss days or leave their work, leading to increased workloads for the remaining people.[55]

This paradox makes it challenging to relieve labor market pressure. In addition, worker shortages also lead to fewer resources to help integrate people who are distanced from the labor market—including people with disabilities, chronic illness, or other special circumstances—into the workforce or into society in other ways, such as through volunteering. More people might be left behind and unable to contribute to the labor market, leaving untapped potential on the table. This could also cause more inequality and have negative health implications.

In parallel, workers might not feel the need to re- or upskill, because a tight labor market provides at least the perception of enough job opportunities. At the same time, our projections suggest the rate of up- and reskilling should actually increase to keep the train of job transitions moving. While this is important on a market-wide level, incentives at the individual level might not be aligned.

Addressing these paradoxes is paramount to keeping the workforce fit for work and resolving the challenges of supply and demand. Finding a pathway to do so will require clear prioritization, alignment, and vision.

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[32] "NEA 2023 Resultaten in vogelvlucht" ("NEA results at a glance"), CBS, May 14, 2024.
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[39] The number of vacancies approximates tightness but is not an absolute measure. The metric can both underrepresent tightness (for example, one vacancy might be posted when there are multiple vacancies to fill) and overrepresent it (for instance, working processes might be adapted to labor market tightness).
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[42] "Omzet industrie ruim 5 procent lager in het eerste kwartaal" ("Industry turnover more than 5 percent lower in the first quarter"), CBS, May 24, 2024.
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[45] These projections are based on McKinsey Global Institute analysis that indicates moderate adoption of automation, AI, and gen AI is ambitious yet achievable and could boost the country's annual productivity growth to 1.8 percent (compared with 0.4 percent recently).
[46] Ability of the Netherlands to independently make decisions and pursue its own interests, goals, and policies without being overly dependent on external actors or influences.
[47] *Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions updating the 2020 new industrial strategy: Building a stronger single market for Europe's recovery*, EUR-Lex, May 5, 2021; "Investing in productivity growth," McKinsey Global Institute, March 27, 2024; Henry Abbink et al., *Inzicht in arbeidsmarktknelpunten voor de uitvoering van het klimaatbeleid: Opzet en uitkomsten van het PBL-ROA-model (Insight into labor market bottlenecks for the implementation of climate policy)*, PBL, September 12, 2022.
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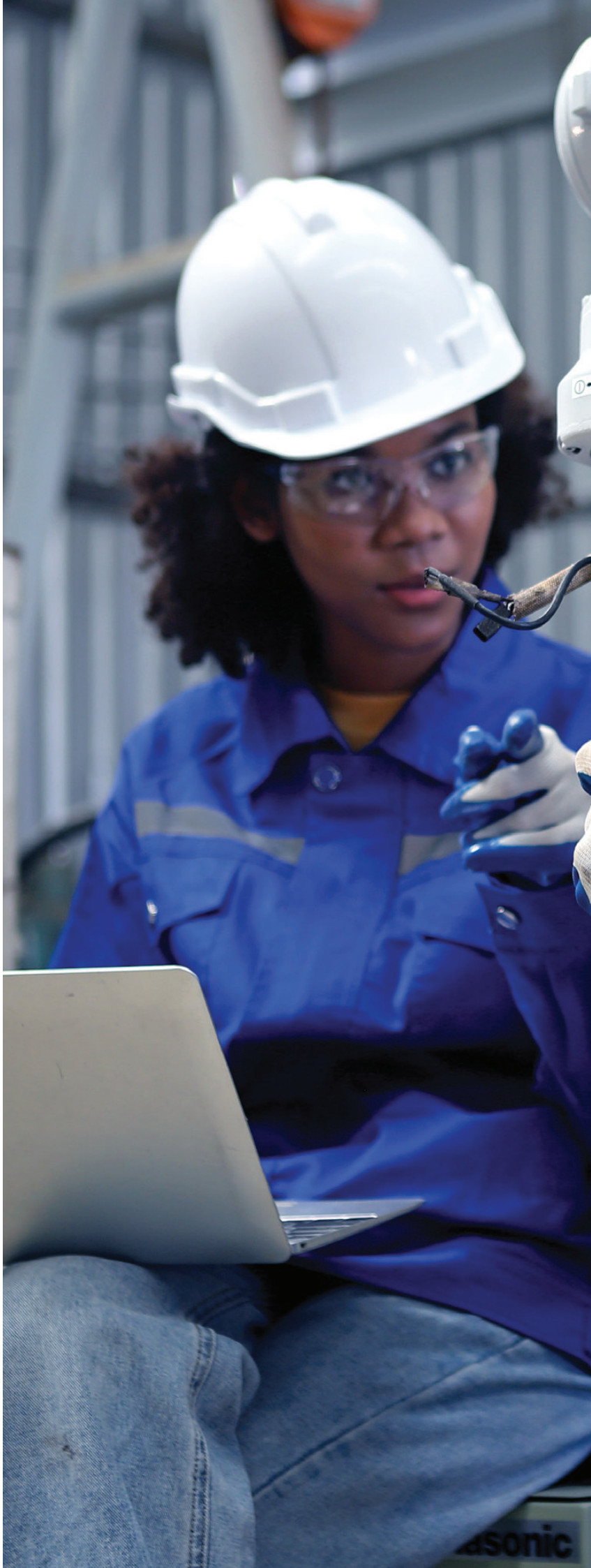
[52] "Vacatures; stroomcijfers, seizoengecorrigeerd" ("Vacancies; flow figures, seasonally adjusted"), CBS StatLine, updated May 15, 2024.
[53] "Mbo; gediplomeerden, studierichting, migratieachtergrond 2015/'16-2020/'21" ("MBO; graduates, field of study, migration background 2015/'16-2020/'21"), CBS StatLine, updated February 25, 2022; "Hoeveel immigranten komen naar Nederland?" ("How many people immigrate to the Netherlands?"), CBS, accessed May 30, 2024.
[54] Professional class refers to the first two digits of the ROA-CBS 2014 (BRC 2014) classification, as used by Netherlands Statistics (CBS). See "Beroepsklasse" ("Professional class"), CBS, accessed June 3, 2024.
[55] "CNV-onderzoek: bijna 1 op de 5 werkenden zit tegen een burn-out aan" ("CNV research: almost 1 in 5 workers is on the verge of burnout"), CNV, March 17, 2023.

2

What needs to happen: A productivity boost and a train of job transitions



The projections and challenges above position the Netherlands at a turning point. Deliberate choices and coordinated initiatives are required to build a future labor market that can realize all societal ambitions. In this part of the report, we suggest a pathway for the Netherlands to relieve the tightness and maintain societal ambitions. Four elements must be addressed: increasing productivity, further optimizing participation, increasing labor market mobility, and enhancing people's fitness to work (Exhibit 10). The first two elements solve the quantitative challenge of reducing overall labor market tightness, while the latter two elements ensure that the labor force is capable of doing the jobs in demand. In this report, we touch on each of these elements, but we pay particular attention to labor productivity and improving mobility through a train of job transitions, given the importance of these two elements on the future labor market.

Relieving labor market tightness

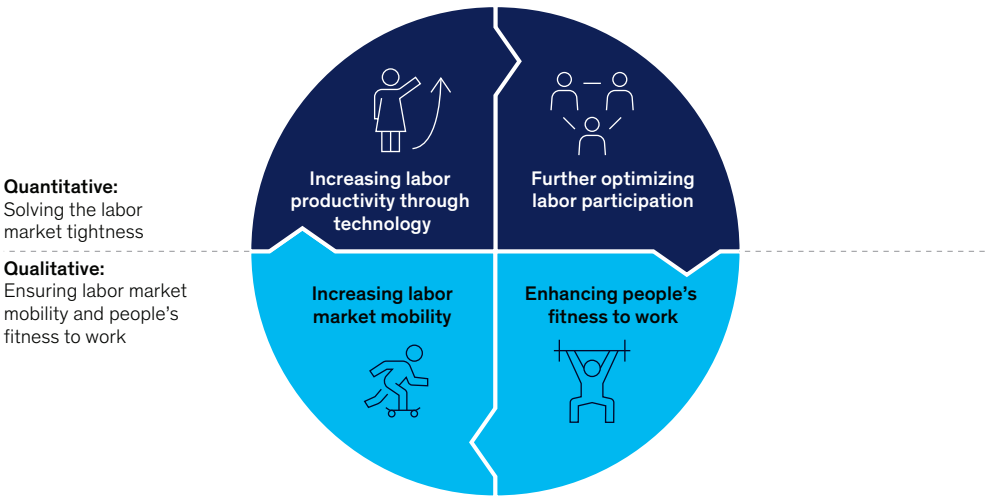
Curbing demand could help solve the tightness, but it would have a negative effect on GDP growth and jeopardize the societal ambitions outlined at the start of this report. If the Netherlands were to sustain its current productivity growth rate of 0.4 percent per year and projected labor force growth rate of 0.3 percent per year,[56] GDP growth would likely drop to 0.7 percent per year from 1.6 percent per year over the past ten years. Reducing GDP growth to 1 percent per year would lead to a sharp increase of the Dutch annual budget deficit to approximately 5 percent per year (well above the EU-agreed 3 percent rule) and a debt ratio of more than 60 percent of GDP.[57] This would therefore directly affect the country's welfare and its ability to achieve its ambitions.

Resolving tightness only through optimized labor market participation, while maintaining current productivity and fulfilling labor demand growth, would require the equivalent of 1.4 million additional workers by 2030. Resolving the labor market tightness through increased productivity would require productivity growth to increase to 2.0 percent per year (up from 0.4 percent per year since 2010).

A feasible pathway could combine increasing productivity and optimizing labor participation while upholding the Netherlands' societal ambition level. Increasing productivity by accelerating the adoption of technological innovations could account for 85 to 90 percent of the country's ability to reduce the labor shortage at an aggregate level. Continued efforts to increase workforce participation could account for the remaining 10 to 15 percent. This would reduce the projected labor shortage in 2030 from approximately 1.4 million people (as described in chapter 1) to 100,000 to

Exhibit 10

Four critical areas could help the Netherlands shape a productive, mobile, healthy, and inclusive labor market.



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200,000, and reduce labor market tightness to a demand for less than 50 people per 100 unemployed people (Exhibit 11).

Increasing labor productivity through technology

Accelerating the adoption of technological innovations—that is, automation, digitalization, and traditional and generative AI—can quadruple productivity growth to 1.8 percent from 0.4 percent per year, reducing labor shortages by about 1.1 million people at an aggregate level by 2030. This productivity increase can be achieved both within jobs (through automation) and by people moving into more productive jobs. In today's tight labor market, increasing productivity through technological innovations has multiple advantages: it helps create economic growth, it makes industry more competitive, and it relieves the tightness in the market, thereby reducing pressure on the workforce.

A new future of work: The race to deploy AI and raise skills in Europe and beyond, a recent report from the McKinsey Global Institute (MGI), models four scenarios for productivity growth in Europe. The key differentiator in these scenarios is the speed at which technological innovations are adopted in the labor market; all scenarios assume that worker time saved because of automation is redeployed in the labor market. The productivity growth of 1.8 percent per year assumed in this report is in line with MGI's slower Europe scenario. From a historical perspective, 1.8 percent productivity growth per year seems ambitious yet achievable, as the Netherlands reported 1.3 percent productivity growth per year from 1995 to 2010.[58] However, even with the required investments, productivity increase is not a given, as the Netherlands saw a lower productivity increase of 0.4 percent per year between 2010 and 2022 despite technology innovations such as the internet.[59]

Adoption of technological innovations is relevant for all sectors (Exhibit 12). This analysis is based on an MGI model that breaks down some 850 occupations into about 2,100 constituent activities and then determines the adoption rate based on the automation potential of a set of 18 capabilities. In the slower Europe scenario, an average of 15 percent of activities across sectors in the Netherlands could be automated—such as order picking in warehouses. The highest automation potential, at 18 percent, is expected in financial services, insurance, and real estate, as well as manufacturing, energy, materials, and utilities; for

Exhibit 11

Increasing productivity and participation in the workforce are critical to resolving labor market tightness.

Projected labor shortage development, thousands of people

XX% Effect on labor shortage

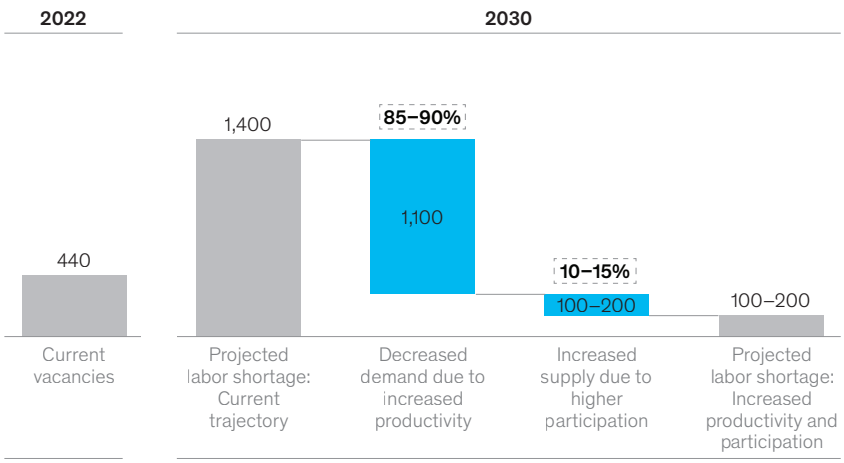

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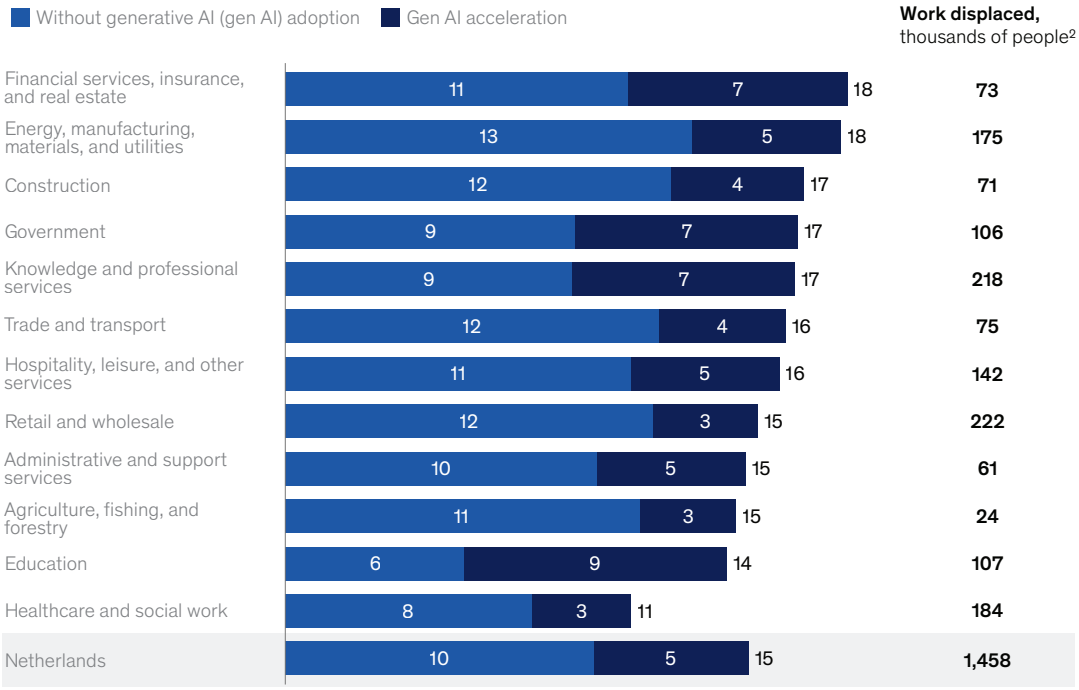
Exhibit 12

Increased automation adoption could displace 15 percent of work in the Netherlands by 2030.

Increased automation adoption,[1] 2022–30, by sector, %



Note: Figures may not sum, because of rounding.
[1]Based on the slower Europe scenario in "A new future of work: The race to deploy AI and raise skills in Europe and beyond," McKinsey Global Institute, May 21, 2024.
[2]Hours displaced converted to headcount equivalent by dividing them by average hours worked per worker (about 30 hours per week).

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example, robotics and automation systems could streamline production processes. The automation potential in healthcare is estimated to be lower, at 11 percent; while adopting automation to this extent would be challenging, it is not sufficient to offset the increased demand for care, resulting in the increased demand and shortages discussed in chapter 1. The largest opportunity for automation is in wholesale and retail, professional and knowledge services, and healthcare and social services.

Achieving this productivity growth through technological innovations requires sizable investments. The Dutch Central Planning Agency (CPB) sees indications that the current stagnating labor productivity may in part be due to lagging investments in R&D and labor-reducing technologies.[60] In 2022, Dutch investments in R&D amounted to 2.3 percent of GDP. To reach the EU ambition of 3 percent of GDP and keep up with the global playing field, the Netherlands would need to invest more than €6.7 billion more in R&D annually.[61] The private sector would likely be the dominant investor in these efforts, both materially and in capabilities, given that productivity is critical to stay competitive. Increased productivity through technological innovations is also critical for the public sector—arguably even more so, given that productivity has been stagnant for decades, according to national statistics.[62] The public sector is not driven by the same market forces as the private sector and hence requires alternative stimuli to reach the same outcome.

The government could potentially accelerate technological innovation through regulatory action—both by creating incentives for investments (for example, to increase the attractiveness of investments in technological productivity

improvements) and by implementing measures to improve (cyber)security and safety. This can build on existing efforts such as the National Growth Fund (Nationale Groeifonds) project AiNed, which aims to grow a strong AI ecosystem in the Netherlands by 2027 to make the country more competitive with international peers.[63]

For organizations to successfully execute the required technological innovation, simply investing in technology is not enough. McKinsey research shows that the value of digital transformations comes from careful and coordinated execution across all focus areas in an organization, including a business-led digital road map aligned on value, the right talent and capabilities, and an effective operating model to deliver on the digital ambition.[64] Given the rapid pace of technological developments, a transformation is not about mastering one use case completely. It's about building a minimum-viable use case; piloting, improving, and scaling it; and then repeating the process for use case after use case. This requires a major step up for most organizations.

In addition to increasing productivity within jobs, technological innovations will boost productivity in the Netherlands overall if people move from lower-productivity to higher-productivity jobs through reskilling and upward development. We elaborate on this mobility in later sections of this report.

Optimizing workforce participation

Building on progress that has already been made, optimizing participation in the workforce could help reduce labor shortages by about 100,000 to 200,000 people by 2030. This would be a two-percentage-point increase on top of the three-percentage-point increase achieved between 2018 and 2022.[65] While this action would have a smaller impact than productivity increases, it is still an important factor in solving the challenges facing the Dutch labor market. These efforts could focus on increasing both the number of hours and years people work and the overall number of people in the workforce (Exhibit 13).

More years. The largest contribution could likely come from supporting people who are willing and able to continue working beyond retirement age. From 2013 to 2023, the number of people aged 67 and over participating in the labor market doubled. Although 82 percent of these individuals worked part-time, this shift resulted in about 120,000 additional FTEs in 2022.[66] Sustaining this growth would result in approximately 60,000 to 110,000 more workers by 2030. Additionally, this could improve health, as people who stay active longer are more likely to report better health.[67] The Netherlands could take inspiration here from New Zealand: in 2022, according to OECD data, 25 percent of New Zealanders 65 and older were participating in the workforce, compared with 11 percent in the Netherlands.[68] According to New Zealand's Retirement Commission policy lead, the country implemented a range of measures to encourage older people to continue to work, including eliminating a mandatory retirement age.[69]

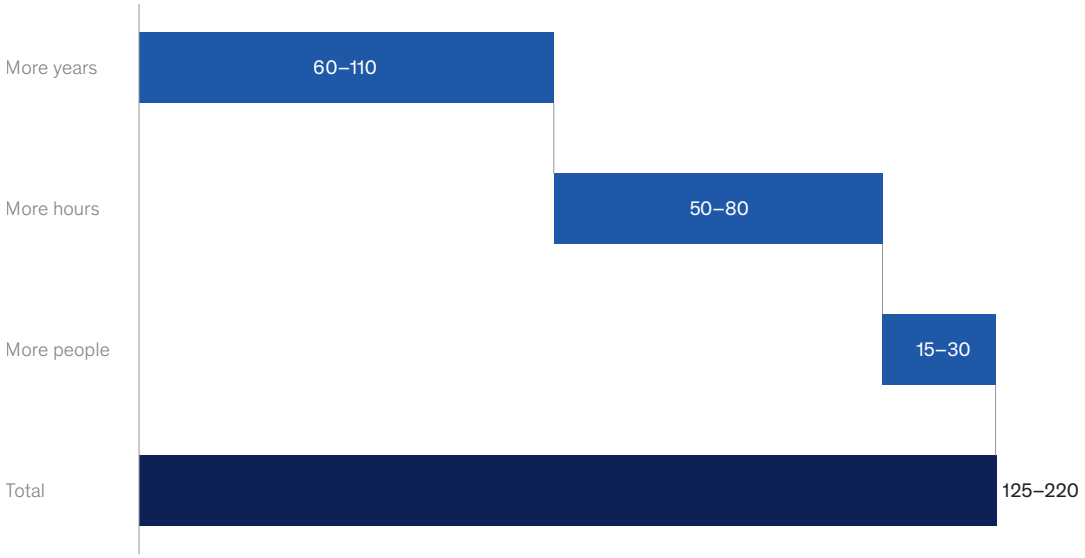
More hours. Efforts to increase workers' hours may be best suited to sectors with relatively low average hours worked per week, including education and healthcare.[70] Several initiatives already focus on this, such as Het Potentieel Pakken, a nongovernmental organization (NGO) that works with organizations—mostly in sectors with many part-time workers—to optimize for labor shortages and support employees' (financial) well-being. For example, the NGO helps

Building on progress that has already been made, optimizing participation in the workforce could help reduce labor shortages by about 100,000 to 200,000 people by 2030.

Exhibit 13

Efforts to increase the number of hours and years people work and the number of people working could help reduce labor shortages.

Participation potential, thousands of workers[1]



[1]Converted from full-time-equivalent employees to workers, assuming an average work week of 30 hours.

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organizations resolve obstacles in scheduling, allowing people to work fewer but longer shifts instead of several shorter ones. Rules and timing are clear, so employees are better able to balance work with their personal lives, and team collaboration is increased. The results of Het Potentieel Pakken's projects show that with the new scheduling, about 10 percent of employees increased their contracts with an average of five hours per week. Extrapolating this result for all part-time workers in the Dutch workforce could add the equivalent of 50,000 to 80,000 people by 2030.

In addition to reducing labor shortages, practical improvements such as better scheduling and collaboration can also increase labor satisfaction. This can in turn improve productivity and reduce absences from work, contributing to people's fitness to work.

More people. Facilitating and motivating people who are currently not looking for work to enter or reenter the labor force could help reduce labor shortages by 15,000 to 30,000 people by 2030. The potential is assumed to be relatively small—it would increase participation by at most 1 to 2 percent (out of a nonworking population of 1.5 million)—because optimizing the participation of nonworkers remains challenging. To help them enter or reenter the labor market would require sufficient support and specific interventions, such as for those who currently have a caregiver role or who are unemployed due to illness or disability. This potential does not account for further reductions in the unemployment rate, because the aforementioned group is likely currently not actively looking for employment and is therefore not included in the unemployment statistics. Increasing labor migration in general could help, as the State Committee on Demographic Developments 2050 points out, but doing so could also lead to increased pressure on (public) services in the long term (see sidebar "The role of labor migration").[71]

One source of talent could be ethnocultural minority individuals (EMIs), according to a recent McKinsey report.[72] EMIs represent 17 percent of the Dutch workforce, but on average, they are more likely than the nonminority population to be out of

the labor market. The unemployment rate is higher for non-western EMIs (7 percent) compared with native citizens (3 percent), while their labor market participation rate is lower (71 percent) than that of native citizens (75 percent). Greater inclusion of EMIs could be a triple win—spurring growth for companies by addressing talent gaps, boosting economic empowerment of EMIs and their families, and delivering benefits for the economy and wider society in economic inclusion and social cohesion.

Employers can play a role in all of the above initiatives by taking a targeted approach to understanding their (potential) employees' needs and offering work packages and schedules that meet those needs. It is also important for employers and society at large to address societal prejudices that limit groups (such as older employees)[73] from participating in the labor force.

In addition, optimized participation must be financially beneficial to work. In a survey of 1,300 people in the Dutch working population, the Dutch National Bank found that one in three people would be willing to work more if the rewards were higher.[74] At the same time, increased wages—especially for lower-paid jobs—could help reduce inequality and encourage investments in technological innovations, which are necessary to relieve the pressure on the market.

Ensuring a fit and mobile workforce

The many shifts expected in the labor market in the coming years will require the workforce to be adaptable. Because every individual is needed in the labor market, people will need to learn a new profession more often than they do today. Structural changes are needed to increase market mobility and help people stay fit for work—in terms of both skills and mental and physical health.

Increasing labor market mobility

The labor market requires high levels of mobility, both vertically and horizontally, for productivity growth and to solve the mismatch between oversupply and shortages of labor expected for 2030 and beyond. In chapter 1 of this report, we introduced the notion that people will need to reskill 1.4 times more often and that a "train of job transitions" would be required.

Higher mobility in the labor market could set the required train of job transitions in motion to address these mismatches through two pathways (Exhibit 14). "Lateral entrants" from adjacent job categories and relevant industries would switch jobs to fill open positions. Some of these people might transfer directly from industries with oversupply, while others may flow in from industries without oversupply, thus requiring those positions to also

The role of labor migration

In this report, labor force growth projections take into account the mid scenario for labor migration from the State Committee on Demographic Developments 2050, which indicates average net migration of 68,000 people per year between 2022 and 2050.[1] This is similar to net migration in 2014–18 and lower than the rate from 2019 to 2023. The latter years saw an average net migration of 130,000 per year, mainly driven by the war in Ukraine.[2]

A recent publication by the State Committee on Demographic Developments 2050 states labor migration could be an effective solution to relieve labor market tightness and generate high-quality knowledge migration. At the same time, the State Committee also states that labor migration could increase societal pressures—for instance, on the housing market—if employers do not provide these services. This is especially true for sectors that exist primarily because of the availability of people working in low-paid occupations. According to the State Committee, labor migration can therefore not be the sole solution for labor market tightness that is caused by the aging population.[3]

[1] Peteke Feijten, Lenny Stoeldraijer, and Coen van Duin, *Bevolkingsprognose 2023-2070: Minder geboorten, meer migratie (Population forecast 2023-2070: Fewer births, more migration)*, CBS, December 15, 2023.
[2] "Immigratie" ("Immigration"), CBS, accessed May 30, 2024.
[3] *Rapport Staatscommissie Demografische Ontwikkelingen 2050 (State Committee report on demographic developments 2050)*, State Committee on on Demographic Developments 2050, January 2024.

be filled. The other required pathway is "upward development," which involves preparing people to fulfill more advanced-skilled jobs within their occupation. Given the increasing demand for advanced-skilled work, gaps at higher skill levels would be filled through continuous development of workers.

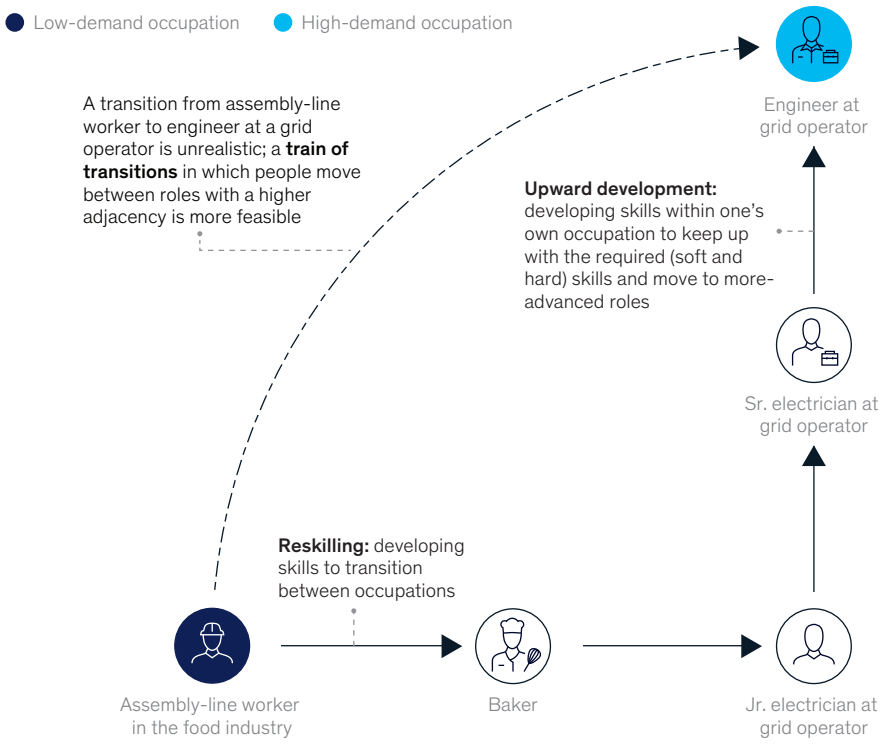
Structural changes to the labor market are required to avoid a situation where there is enough labor supply but a lack of the right skill sets. Other organizations—for instance, DenkWerk and De Buitenboordmotor—have also published on this topic.[75] Here, we highlight three pairs of changes that could help get the train of job transitions moving at speed.

Establishing infrastructure to support career changes (such as regional work centers) and adopting skills-based recruitment practices could help attract talent to the right opportunities. Apprenticeship-based learning approaches—to move people faster into paid work—and financial support for reskilling during training could alleviate the financial hurdles preventing people from moving from one job to the next. Finally, improving how reskilled individuals are integrated into their new roles and embracing continuous development in organizations are essential to ensure that people can become successful in their new jobs.

Establish infrastructure to support career changes. Typically, workers have to figure out pathways to career changes on their own. In contrast, pre-occupational skilling offers highly supported pathways, including discussions with teachers, open house visits, and clear steps to follow. A broad societal approach in which public and private organizations join forces can help establish the required infrastructure for guidance and education. For example, the government recently allocated funding to scale regional work centers (RWC), which bring together national agencies, local government, and private labor market players in each region to provide guidance and support.[76]

Exhibit 14

A train of job transitions could help fill jobs with high demand.



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Adopt skills-based recruitment practices. Lateral entrants face difficulties finding employment because established hiring practices often favor experience in the field of work. This is despite evidence suggesting that hiring based on skills assessment is twice as predictive of job performance than hiring based on work experience in the same field.[77] Employers should hire applicants based on their experience and motivation, viewing job transitions as a promising sign of their ability to learn new skills and adapt, and take responsibility in developing existing employees to keep their skills relevant and allow them to grow. For example, Arbeidsmatchplatform, a collaborative effort by seven large companies active in the energy sector, aims to fill jobs in skilled manual labor by selecting people primarily on their skills and less on their prior education, making it easier for people without a background in the sector to find suitable jobs in this area of work.[78]

Adopt apprenticeship-based learning approaches. Existing initiatives demonstrate the benefits of apprenticeship programs ("leerwerktrajecten") for people who switch roles mid-career. In this approach, workers spend less time in the classroom and more time learning on the job. Moreover, throughout our interviews we saw a preference for a more apprenticeship-based learning approach, in which new entrants learn a basic set of skills on a narrow set of tasks and the expand their skills while progressing on the job. This also allows people to join or rejoin the labor force more quickly.

Support reskilling financially. People who are reskilling mid-career often have financial responsibilities, such as a family or a mortgage, and cannot risk the salary decrease that is common during the reskilling period. Even in a combined learning and working approach, the lack of funding for work-to-work transitions is a barrier.[79] People given the opportunity to reskill mention this financial gap as a key barrier that inhibits the rate of reskilling. For example, during the COVID-19 pandemic, HR and staffing service provider Randstad contacted 13,000 temporary workers whose contracts had been terminated. Half of these workers received an offer to reskill, but only about 1,000 people accepted the offer. Concerns about a temporary loss of income were reported as one of the main reasons for not accepting the offer.[80]

Integrate reskilled individuals in their new roles. Employers should adapt their organizational infrastructure to smoothly integrate reskilled people in their new occupation. For example, secondary vocational ("middelbaar beroepsonderwijs" or "MBO") teachers who start teaching later in their careers experience high work pressure during their first years, and a third of them leave the sector. There is opportunity to improve the support in this crucial phase.[81] Because of the shortages, time and support for on-the-job training and development may be limited. Tailored learning and development plans for lateral entrants should be prioritized, but few exist.

Embrace continuous development in organizations. The train of job transitions only works if there is sufficient upward mobility in the market. Employers have a responsibility to continue developing employees and providing pathways to the next opportunity. This will require structural changes to embed learning and development into the work rhythm of all employees. The effect of this is threefold: it improves mobility and therefore enables the train of job transitions, it improves the adaptability of employees and organizations, and it helps realize the required productivity improvement described earlier.

In addition to the above three pairs of changes, organizations need a cultural change in behavior and thinking about work and learning to keep the train of job transitions on track. Employers, government, and employees have to adapt to a new reality in which the majority of people will switch professions in their working lives, perhaps even more than once. Employees could also benefit from an apprenticeship-based mindset in their (pre-occupational) education and training, as this mindset makes them more mobile and less bound to a specific job or industry.[82]

Enhancing people's 'fitness to work'

"Fitness to work" is the ability to go to work in good physical and mental health with the appropriate skills to do the job. Ensuring work is beneficial and not harmful to health is important to reduce labor force dropouts and increase productivity and adaptability, which decreases pressure on the labor market. Investments to ensure fitness to work are particularly relevant in sectors with high

labor shortages, such as healthcare, because they will benefit both individual well-being and overall productivity improvement.

Skill fitness. "Skill fitness" refers to the alignment of workers' skills with skills that are in demand and to their ability to learn new skills. Ensuring skill fitness has been a topic of conversation in the Netherlands for years—not only because such fitness enables workers to effectively do their jobs but also because workers value the opportunity to learn. With the future needs of the workforce changing at a rapid pace, the importance of continuous development is only increasing. Developing new skills not only enables people to apply those specific skills but also trains their ability to learn. This experience makes their skill sets more adaptable for future needs. Our research indicates that technological innovations such as automation, digitalization, and traditional and generative AI will substantially change the demand for certain skill sets in the coming decade, increasing the total number of work hours spent on technological and social and emotional skills while reducing the hours of work on basic cognitive skills.[83]

Employers have been exploring training opportunities for years, but significant improvements can still be made on the institutional level to make them more effective. The participation rate for employee trainings in the Netherlands is approximately three percentage points lower than the average (42.4 percent) for selected peer countries,[84] despite 86.0 percent higher spending on continuous vocational courses than peers.[85] In our survey of CHROs of large Dutch companies, 88 percent indicated that they offer trainings for employees to continuously develop and learn various skills. However, only 33 percent said their trainings are having the intended effect, and 64 percent indicated that their employee training efforts could be ten times more effective than they are currently. Smaller enterprises, on the other hand, might lack the scale and professional HR to implement skills development infrastructure in the first place.

To maintain and enhance skill fitness in the coming decade, learning should be embedded structurally in each job. Our belief, based on discussions with a broad set of stakeholders, is that about 5 percent—or on average two hours per full-time week—of working time should be dedicated to learning and that this time should be built in as a core part of work. This is an organizational and individual responsibility. Based on our experience, we observe four elements that help improve the effectiveness of learning. First, organizations need to embed learning in their DNA by setting annual, monthly, or even weekly objectives for employees; considering these objectives in formal review processes; tracking the impact of learning activities and celebrating and role-modeling learning behavior. Second, employers should provide direction on what their employees should learn, in line with the future needs of the organization. Third, employers should create learning pathways for different employee segments within their organization. Finally, they should ensure that learning is directly embedded into daily tasks by blending learning into daily work activities—so-called learning on the job—which also requires consistent and frequent coaching and feedback.

Physical fitness. Across all industries, it is important to safeguard the physical health of workers and ensure that work does not harm their health—whether from hard physical labor and repeated movements or from excessive time spent sitting. Specific focus should be on physically demanding jobs that people typically cannot sustain all the way to retirement age. As the retirement age rises, this challenge is likely to grow. While technological innovations to improve productivity may contribute to reducing the physical strain of certain jobs, they will not fully eliminate the burden. Early retirement cannot be the only solution in these industries. People can still contribute to society later in their careers, and many are eager to do so. For example, firefighters' employers and unions in the Netherlands recently agreed to change a forced 20-year retirement policy to be voluntary. Ideally, multiple paths would be available for such workers. Employers offering physically demanding jobs should take responsibility for maintaining workers' health by alleviating physical strain and by designing opportunities to transition to less physically demanding or straining work within or outside the organization. Employees with physically straining jobs should be able to make timely use of available alternatives.

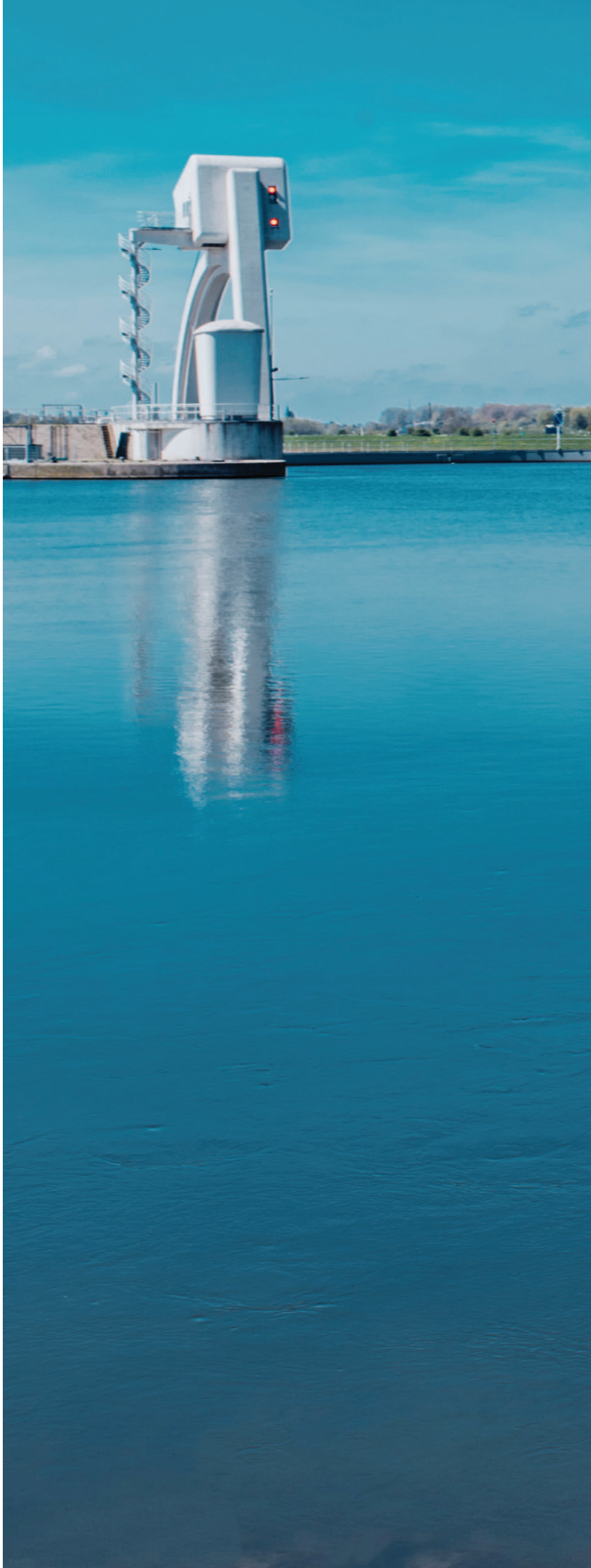
Mental fitness. Declining mental health is a broad societal problem that also profoundly affects the labor market. TNO expects stress on working people to increase in the coming 20

years, demanding an integrated approach by the government, healthcare systems, educational systems, and employers.[86] This issue won't be solved through a handful of best practices. However, previous research from the McKinsey Health Institute shows that employers have considerable opportunities to improve employee mental health through six modifiable drivers that focus on creating a positive and meaningful (social) environment at work, reducing and managing stress, and supporting employees to uphold a healthy and financially secure lifestyle.[87] The government also has a role to play—for example, by raising the visibility of this issue, focusing more on prevention, and offering tools to improve mental health, as outlined in the Dutch government's "Approach to mental health for all of us" initiative.[88]

[56] *Rapport Staatscommissie*, January 2024.
[57] *Centraal Economisch Plan 2024*, CPB, February 2024.
[58] "Arbeidsvolume," updated June 23, 2023; "Opbouw binnenlands product (bbp)," updated June 23, 2023; "Arbeidsdeelname en werkloosheid per maand," May 16, 2024.
[59] Ibid.
[60] *Krappe arbeidsmarkt vraagt om keuzes*, February 2024.
[61] "Nederland verliest economisch terrein door achterblijvende R&D-investeringen" ("The Netherlands is losing economic ground due to lagging R&D investments"), TNO, January 22, 2024.
[62] "GDP per hour worked," accessed May 30, 2024.
[63] "AiNed," Dutch Research Council (NWO), accessed May 30, 2024.
[64] Eric Lamarre, Kate Smaje, and Rodney Zemmel, "Rewired to outcompete," *McKinsey Quarterly*, June 20, 2023.
[65] "Arbeidsdeelname; kerncijfers seizoengecorrigeerd" ("Labor participation; key figures seasonally adjusted"), CBS StatLine, updated May 15, 2024.
[66] "Grijs potentieel - Krappe arbeidsmarkt verlicht door pensioengerechtigden" ("Gray potential - tight labor market alleviated by pensioners"), ABN AMRO Bank NV, February 6, 2024.
[67] "Age is just a number: How older adults view healthy aging," McKinsey Health Institute, May 22, 2023.
[68] "Labour force participation rate," OECD, accessed May 30, 2024.
[69] "New Zealanders over 65 staying in paid work longer to 'transition into retirement,'" *New Zealand Herald*, April 25, 2024.
[70] "Meer dan de helft werkt voltijds" ("More than half of Dutch people work full-time"), CBS, February 20, 2020.
[71] *Rapport Staatscommissie Demografische Ontwikkelingen 2050*, January 2024.
[72] Ethnocultural minority individuals include individuals with a recent migration history as well as those whose families have been in the Netherlands for three or more generations. The place of birth of individuals and their parents is used as a proxy for the region of origin. For more, see "Ethnocultural minorities in Europe: A potential triple win," McKinsey, February 8, 2024.
[73] "Leeftijdsdiscriminatie op de arbeidsmarkt" ("Age discrimination in the labor market"), Rijksoverheid, accessed May 30, 2024.
[74] "Wat mensen prikkelt om meer of minder te werken" ("Incentives for people to work more (or fewer) hours"), De Nederlandsche Bank (DNB), May 30, 2023.
[75] In 2019, DenkWerk issued a call to action for government, education, and business to establish a systemized reskilling approach explaining different obstacles; they reiterated this in their 2023 report. De Buitenboordmotor developed a road map with 14 'breakthroughs' to improve labor market mobility and how people can move between and to work. For more, see *Arbeid in transitie*, February 2019; *Nederland in beweging*, September 2023; and "De 14 Systeemdoorbraken" ("14 system breakthroughs"), De Buitenboordmotor, accessed May 30, 2024.
[76] "Nieuw regionaal werkcentrum Groot-Amsterdam geopend om werkloosheid door corona tegen te gaan" ("New regional work center in Greater Amsterdam opened to combat unemployment due to corona"), Municipality of Haarlemmermeer, accessed May 30, 2024; Maarten Camps, "Column: Regionale Werkcentra als oplossing voor de krapte" ("Column: Regional Work Centers as a solution to the shortage"), UWV, October 5, 2022.
[77] "Taking a skills-based approach to building the future workforce," McKinsey, November 15, 2022.
[78] "Werk in jouw regio" ("Work in your region"), Arbeidsmatchplatform, accessed May 30, 2024.
[79] Jessy Burgers and Marlou Visser, "Coronacrisis dwingt soms tot omscholen" ("The COVID-19 crisis sometimes forces reskilling"), *De telegraaf*, August 3, 2020.
[80] Ibid.
[81] "Onderzoek: 'Begeleiding van zij-instromers in mbo kan beter'" ("Research: 'Support for lateral entry students in MBO could be better'"), MBO-Today, November 3, 2023.
[82] "Taking a skills-based approach," November 15, 2022.
[83] "A new future of work," May 21, 2024.
[84] Belgium, Denmark, France, and Germany.
[85] "Continuing vocational training survey," Eurostat, accessed May 30, 2024.
[86] "Maatschappelijke ontwikkelingen kunnen werkstress in de toekomst vergroten" ("Social developments may increase work stress in the future"), TNO, March 26, 2024.
[87] Jacqueline Brassey, Lars Hartenstein, Barbara Jeffery, and Patrick Simon, "Working nine to thrive," McKinsey Health Institute, March 13, 2024.
[88] "Aanpak 'Mentale gezondheid: van ons allemaal'" ("Approach to mental health for all of us"), Rijksoverheid, June 2022.

3

Where to start: An orchestrated action plan



Strengthening the Dutch labor market through the four areas outlined in the previous section—productivity, participation, labor market mobility, and fitness—requires a sizable transformation. A "train of job transitions" should be set in motion, as we highlighted in the previous section. Building a labor market with higher mobility and more flexibility demands new mindsets, cultures, practices, and infrastructure, all of which take time to develop. Yet there is an urgency to act now with speed and scale, because the tightness in the labor market and the scale of national ambitions require immediate action. By 2030, 980,000 new houses need to be built.[89] CO_2 emissions need to be reduced by at least 55 percent compared with 1990 levels.[90] And the aging population will boost healthcare needs. Even today, the expansion of the electricity grid is not keeping up with increasing demand,[91] the government is unable to execute its own policy because of labor shortages,[92] and a lack of skilled IT professionals is limiting the ability of companies to grow their business.[93]

An orchestrated action plan is needed for three areas of work

It is crucial that all organizations—private and public—focus on realizing more growth in productivity through technological innovation to alleviate the tightness on an aggregate level. At the same time, high labor shortages in certain areas that are crucial to realize the aforementioned societal ambitions are expected to remain, unless more targeted and comprehensive action at higher speed and scale is taken to address shortages in three areas of work in particular: skilled manual labor (particularly for the housing and energy transition), digital and tech jobs (particularly advanced jobs), and health and social care (particularly for nursing and elderly care). Our projections indicate that in 2030, the Netherlands could face shortages in these areas of 100,000, 105,000, and 245,000 people, respectively. The challenges in these three areas of work are not unknown, and many initiatives have already been taken to resolve them. However, each of these areas could benefit from a more collaborative, better orchestrated approach. For example, in the healthcare sector, many initiatives already exist to address partial elements of the challenge—such as optimizing participation (by Het Potentieel Pakken) and encouraging lateral inflow (by ZorgStart).[94] At the same time, the inflow of MBO and HBO students in nursing dropped by about 25 percent from 2021 to 2023, putting additional pressure on the sector in the next one to four years.[95]

The scale of the challenge requires a comprehensive, orchestrated plan for the next five years and beyond through which government, employers, employee organizations, educational institutions, and NGOs all work together to solve the pressing shortages in these three areas of work, and catalyze the required labor market transformation toward 2030 and beyond.

On top of productivity growth, there are seven solution levers: giving more hours to part-time workers, increasing work beyond retirement age, expanding net inflow through pre-occupational skilling, reskilling, retention, upward development, and labor migration. The order of importance differs across the three areas of work. However, for the three areas of work we focus on, four levers are most critical to address: pre-occupational skilling, reskilling, retention, and upward development (Exhibit 15).

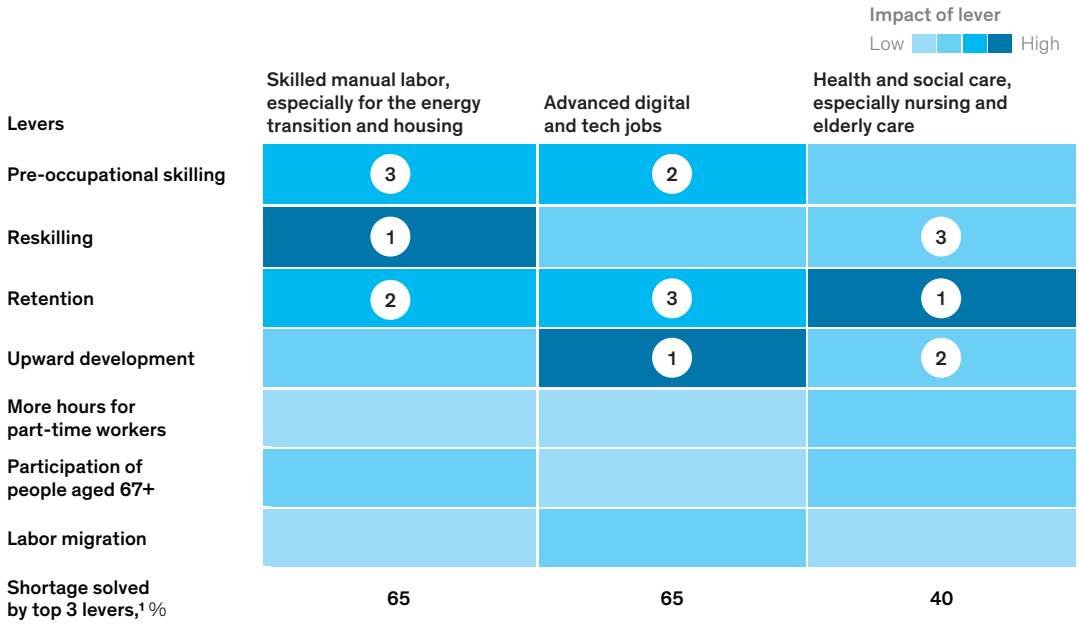
Pre-occupational skilling

An efficient labor market exhibits a healthy balance between the available skill sets of the labor force and the skill demands of the market. Currently, the inflow of people to the labor market is unbalanced, creating unnecessarily high variance in job prospects in different areas of work. Industry groups, in collaboration with employers and educational institutions, are already organizing marketing campaigns to promote education and jobs in areas with high market demand.[96] Further orchestration is essential to rebalance the inflow. Educational institutions could engage more effectively with prospective students to make them aware of job opportunities in their areas of interest and potentially guide them toward fields with higher market demand. Government and employers in high-demand sectors could consider expediting the process by offering incentives—such as scholarships and grants or housing support in locations with housing shortages—for certain types of education. As a last resort, measures could be considered to limit enrollment in areas of study with lower market demand through mechanisms such as a "numerus fixus."

Pre-occupational skilling is a particularly promising solution to address shortages in advanced

Exhibit 15

Investing in the skills of (future) employees and retaining talent can reduce shortages in critical areas.



[1]Not taking into account additional productivity gains past the 1.8% McKinsey Global Institute scenario.

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digital and tech jobs, as indicated in Exhibit 12, by addressing a younger generation that has grown up with digital and tech. For example, Codam Coding College in Amsterdam offers an accessible software development program to a large and diverse group of people who are not as easily reached by traditional education.[97] Taking a broader perspective on required skills and adopting alternative educational methods could be particularly effective to increase inflow into this area.

Promoting pre-occupational education to foreign students could be an additional solution for these shortage areas. For example, barriers to entry for people who don't speak Dutch are lower for certain digital and tech jobs compared with some other areas of work such as healthcare.

Reskilling

In addition to making sure new entrants to the job market have the right skills, it is necessary to reskill the existing labor force. Reskilling could be a major source of inflow into positions requiring more basic skills in skilled manual labor and health and social care, as opposed to digital, which requires a more advanced skill level. With appropriate reskilling, workers could move to shortage areas from other areas. Adjacent skill sets in other areas of work can be found in many sectors, both in the same company as well as in completely different industries.

Major companies in areas of labor abundance—for example, those considering reorganizations—could make agreements with companies (or groups of companies) with shortages, making it easy for workers to find new opportunities in adjacent work areas. For example, Techniek Coalitie Limburg supports skilled manual laborers who were let go by VDL Nedcar in finding new jobs at partner companies.[98] As this transition typically does not occur automatically, government could consider accelerating the transition by orchestrating, promoting, and providing incentives for such collaborations.

Educational institutions are already working on reskilling for lateral inflow, but not at the scale

needed and not at the maturity of pre-occupational education. Public, private, and in-company educators could support these efforts by further including reskilling studies in their education offerings. For example, FastSwitch provides shortened reskilling trajectories at universities of applied sciences (HBO) for in-demand jobs, such as nurses, engineering work planners, and software developers.[99] The organization also provides—or helps people find—jobs with partner employers, where new hires will continue learning on the job. In addition to educational institutions, some companies, especially in skilled manual labor, have started offering their own in-company educational programs. However, even with these in-company programs, the scale of all existing reskilling educations combined is not sufficient to solve the shortages.

The creation of sufficient reskilling positions could be further accelerated by providing clarity on the total number and geographical locations of required positions for these shortage areas, and by orchestrating to align offerings accordingly. Larger companies could likely play a bigger role because they more often have existing in-company reskilling infrastructure. They could, for example, open their training programs to small and medium-size enterprises within the region and share the outflow of reskilled workers.

In the short term, at least for these shortage areas that are essential to societal ambitions, the government and employers can find solutions to bridge the financial gap during reskilling and to address the insecurity blocking people from transitioning to a new profession.

Retention

Especially in healthcare, but also in skilled manual labor, outflow to other areas of work is high.[100] Retaining the existing labor force in these shortage areas of work is critical, or hard-fought gains in attracting new workers will go to waste. The causes of attrition differ among areas of work and require specific solutions to ensure new entrants stay long term. For health and social care, solutions to relieve high pressure at work and ensure appropriate onboarding programs are likely to be particularly effective, as these are often mentioned as reasons for leaving the industry. For example, FastSwitch's nursing program ensures that students are onboarded properly in their new jobs and receive sufficient attention in the early months of their tenure.[101] In another example, the Practice Transition Accreditation Program, an evidence-based accredited registered nurse residency and fellowship program created by the American Nurses Credentialing Center (ANCC), demonstrated an 85 percent retention rate over 12 months, compared with the industry average of 71 percent.[102] Retention of workers in shortage areas can also be achieved by ensuring that workers switch to other organizations in the same area of work instead of to completely different areas.

Upward development

In addition to lateral movements, the train of job transitions requires upward development. Companies will have to fill some of the vacancies by upskilling existing employees for such roles. They could accelerate the transition by upskilling people who already have most of the required skills. Then, they could fill the old position of the upskilled employee, which is likely in an area of work that is easier to fill, with new inflow. Upward development will be relevant for all three shortage areas, and several examples of in-company education already exist. For example, Alliander, an energy grid operator aiming to reduce the labor shortage in the

Retaining the existing labor force in these shortage areas of work is critical, or hard-fought gains in attracting new workers will go to waste.

energy transition, relieves shortages by training employees in specific required skills instead of training them to do everything the job entails at once. Alliander then employs them to perform those specific skills and subsequently build on their skill set via on-the-job training. Enexis, another electricity grid operator, has a similar program. Hospitals can take a similar approach; for example, the Antonius Hospital sometimes fills a need for a specialized intensive care nurse by upskilling a registered nurse already working in the hospital.[103]

Government, in collaboration with key employers, could consider accelerating upward development in these three shortage areas of work by jointly defining the standard trajectories, upskilling needs, and specific train of job transitions. Then, employers (in some cases through collaboration with the education sector) could support upward development by providing upskilling education and reskilling by training lateral entrants.

In addition to the above four main solution elements, a few sector-specific solutions can also be considered as part of the orchestrated action plan. For example, labor migration may be effective at partially solving the shortage in digital and technical skills, and optimizing participation can be particularly valuable in nursing, which sees a relatively high share of part-time labor.[104]

Setting the train of job transitions into motion for these three areas of work with shortages can serve as a catalyst for the broader train of transitions required across the labor market. In that way, this orchestrated action plan could lead to broader cultural and practical changes in terms of mobility, reskilling, continuous development, and productivity.

[89] "Grootschalige woningbouwgebieden" ("Large-scale housing areas"), Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, accessed May 30, 2024.
[90] "Klimaat en energie" ("Climate and energy"), Rijksoverheid, accessed May 30, 2024.
[91] "Krapte op het elektriciteitsnet" ("Tightness on the electricity grid"), Tweede Kamer, accessed May 30, 2024.
[92] "Weinig zicht op resultaten extra geld cabinet" ("Little insight into the results of additional government money"), Algemene Rekenkamer, May 15, 2024.
[93] "Onderzoek wijst uit: tekort IT-personeel zorgt voor stagnatie" ("Research shows: Shortage of IT personnel causes stagnation"), Nederland Digitaal, April 10, 2024.
[94] Petra Gaffke, "Zijn zij-instromers in de zorg de oplossing voor personeelskrapte? 'Het is een verademing om dit te doen'" ("Are lateral entrants into healthcare the solution to staff shortages? 'It's a relief to do this'"), EenVandaag, May 9, 2024.
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[96] "Volop werkgeluk in de techniek" ("Plenty of job satisfaction in technology"), Techniek Nederland, September 21, 2023.
[97] "Word een goedbetaalde software engineer!" ("Become a highly paid software engineer!"), Codam Coding College, accessed May 30, 2024.
[98] "Reorganisatie VDL Nedcar - Techniekcoalitie kan hierbij ondersteunen" ("Reorganization VDL Nedcar - Technology Coalition can support this"), Technology Coalition Limburg, January 29, 2024.
[99] "Sector techniek: Be an engineer," FastSwitch, accessed May 30, 2024.
[100] "Mobiliteit van werknemers; AZW (smal), kenmerken mobiliteit, regio" ("Employee mobility; AZW (narrow), mobility characteristics, region"), CBS StatLine, May 21, 2024; "Werkzame beroepsbevolking; wisseling van beroepsklasse" ("Working population; change of professional class"), CBS, May 15, 2024; "Arbeidsmarktdynamiek in de jaren tien: 4. Instroom en uitstroom per bedrijfstak" ("Labor market dynamics in the 2010s: 4. Inflow and outflow per industry"), CBS, November 7, 2022.
[101] "Sector zorg: FastSwitch hbo-v" ("Sector Healthcare: FastSwitch hbo-v"), FastSwitch, accessed May 30, 2024.
[102] "How to bridge the experience gap by supporting nurses of all tenures," McKinsey, March 28, 2024.
[103] "Opleiding tot Intensive Care (IC) verpleegkundige" ("Education to become an Intensive Care [IC] nurse"), Antonius Hospital, accessed May 27, 2024.
[104] "Wie werken het vaakst in deeltijd?" ("Who is most likely to work part-time?"), The Netherlands in Numbers 2022, CBS, accessed May 30, 2024.

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Conclusion

In this report we have presented a granular forecast on the 2030 Dutch labor market and described a pathway that could guide the Netherlands out of its tight labor market while allowing the country to maintain its societal ambitions by increasing productivity, further optimizing participation, increasing labor market mobility, and increasing people's fitness to work.

Solutions are at hand. Accelerating the adoption of technological innovations could quadruple productivity growth, resolving most of the tightness. This acceleration is ambitious, yet achievable, but it does require investments in technology, people, and organizations. Further optimizing labor participation can provide an additional element to resolve the tightness.

Structural changes to the labor market are required to help avoid a situation in which there is enough labor supply but a lack of the right skill sets. In addition, a shift in culture and mindsets about the labor market is necessary to support people in becoming increasingly mobile, going from 1.9 professions in their life to 2.4, on average. These structural and cultural changes are critical for ensuring sufficient mobility and getting the train of job transitions moving. These goals combine lateral reskilling, upward development, and continuous development and are enabled by a labor force that is fit to work. As a starting point, efforts could focus on three critical areas of work with the highest shortages: skilled manual labor, especially for housing and the energy transition; advanced digital and tech jobs; and nursing and elderly care, where a combination of improvements in pre-occupational skilling, reskilling, upward development, and retention can help fulfill needs.

There is an urgency to act now with speed and scale. The scale of the challenge requires a comprehensive, orchestrated action plan for the next five years and beyond in which government, employers, employee organizations, educational institutions, and NGOs all work togeteher to build a 2030 labor market that works for the future of the Netherlands.

The path that is outlined here for the Netherlands is no small undertaking; neither is it comprehensive. But it indicates the scale of the effort and suggests some critical steps for shifting the country's approach to skills, learning, and work to ensure it remains a great place to live and work—today and in the future.

Acknowledgments

This research was led by **Dieuwert Inia, Marc de Jong,** and **Reinout Goedvolk,** senior partners in McKinsey's Amsterdam office; **Hagar Heijmans,** a partner in the Amsterdam office; **Alexander Veldhuijzen,** an associate partner in the Amsterdam office; and **Martijn Repko** and **Wouter van Aanholt,** consultants in the Amsterdam office. **Sven Smit** is chair of the McKinsey Global Institute and a McKinsey senior partner based in Amsterdam.

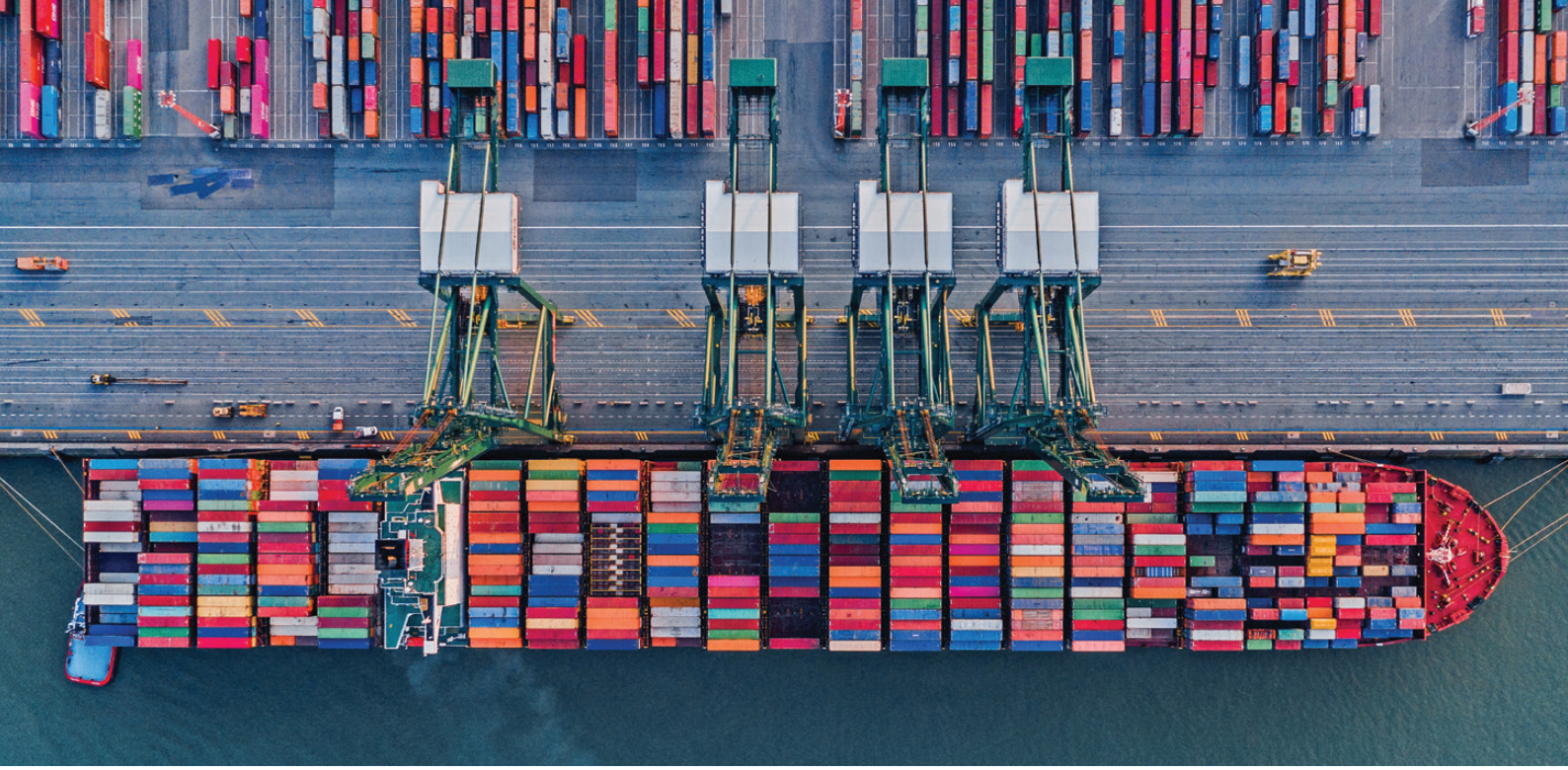
The author wishes to thank the core team members: Andrey Sakharov, Anouk Hodde, Carla Rhode, Floor Rienks, Hein Laterveer, Heleen Vos, Julia Dhert, Lex van der Vegt, Luc Kootte, Maksim Kazhdan, Menno Ploeg, Rogier Buck, Sarah Lyons, Sjoerd Joosten, and Sophie Post. Special thanks to the McKinsey Global Institute team: Alok Singh, Darien Ghersinich, and Gurneet Singh Dandona. Several other McKinsey colleagues and alumni offered valuable input and guidance: Arne Gast, Arnout de Pee, Eric Wiebes, Henk Broeders, Jasper van Ouwerkerk, Liesje Meijknecht, Menno van Dijk, Philippine Risch, Pieter Winsemius, and Paul Rutten.

We are grateful to a select group of thought leaders who were kind enough to read our draft report, provide us with questions, and sharpen our thinking: Dominique Hermans of Randstad, Herna Verhagen of PostNL, Ingrid Thijsen and Focco Vijselaar of the Confederation of Netherlands Industry and Employers (VNO-NCW), Karen van Oudenhoven of the Netherlands Institute for Social Research (SCP), Maurice Limmen of the Netherlands Association of Universities of Applied Sciences (Vereniging Hogescholen), Piet Fortuin of the Christian National Trade Union Federation (CNV), and Pieter Hasekamp of Netherlands Bureau for Economic Policy Analysis (CPB).

Furthermore, we thank the experts who provided us with valuable insights to challenge and substantiate our findings: Coen Teulings of Utrecht University; Corinne Vigreux of Codam; Erik Versnel of Rabobank Metropolitan Region of Amsterdam; Franka Morssink of Philadelphia Zorg; Guusje Dolsma and Irene Linthorst of the Confederation of Netherlands Industry and Employers (VNO-NCW); Heleen Cocu-Wassink and Floor Dijkstra of Alliander; Henk Hagoort of the VO-raad; Hilde Garssen and Marlous Nieuwkoop of KPN; Hubert-Jan Albert and Feite Hofman of the Ministry of Education, Culture, and Science (OCW); Janette Bezemer of FastSwitch – Be an Engineer; Joost Baeten of the Ministry of Social Affairs and Employment (SZW); Kim Hooiveld of House of Skills; Marrie Verboom-van Leeuwen of FastSwitch – HBO-v; Michiel Boots, Sandor Gaastra, Stephanie Holle, and Victor Joosen of the Ministry of Economic Affairs and Climate Policy (EZK); Nadine Beister of Achmea; Nathalie van Berkel, Maarten Camps, and Rob Witjes of the Social Security and Public Employment Agency (UWV); Onno Koers of the Amsterdam Economic Board; Richard Kerste of Brainport Development; Ronald Kleijn of FastSwitch - Make IT Work; Simone Heidema and Nienke Meijer of De Buitenboordmotor; Tom Janssen of Enexis; and Wieteke Graven and Louise Luitse of Het Potentieel Pakken. We also thank the SER-committee SEA (Social-Economic Affairs) for the invitation to discuss our findings and for their valuable questions and contributions.

The report was edited and produced by Annie Mullowney and the LEFF team of designers.

This work is independent and has not been commissioned or sponsored in any way by any business, government, or other institution. While we gathered a variety of perspectives, our views have been independently formed and articulated in this report. Any errors are our own.



Technical appendix

In this technical appendix we explain the methodology, calculations, and inputs we used to calculate the projections in chapter 1 of the report.

Labor market tightness

Labor market tightness is calculated based on developments in the number of vacancies and the level of unemployment (Exhibit A1).

$$\text{Labor market tightness} = \frac{\text{Vacancies}}{\text{Unemployment}} = \frac{\text{Labor demand-Supplied labor}}{\text{Unemployment}}$$

Unemployment. Unemployment levels are taken from CBS for the 2022 base (approximately 350,000) and are at a historic low (relative to the past ten years or so). The assumption is that the unemployment rate will not drop below this level, and that unemployment will grow at the same rate as the working population (0.3 percent per year, in line with the State Committee on Demographic Developments 2050).

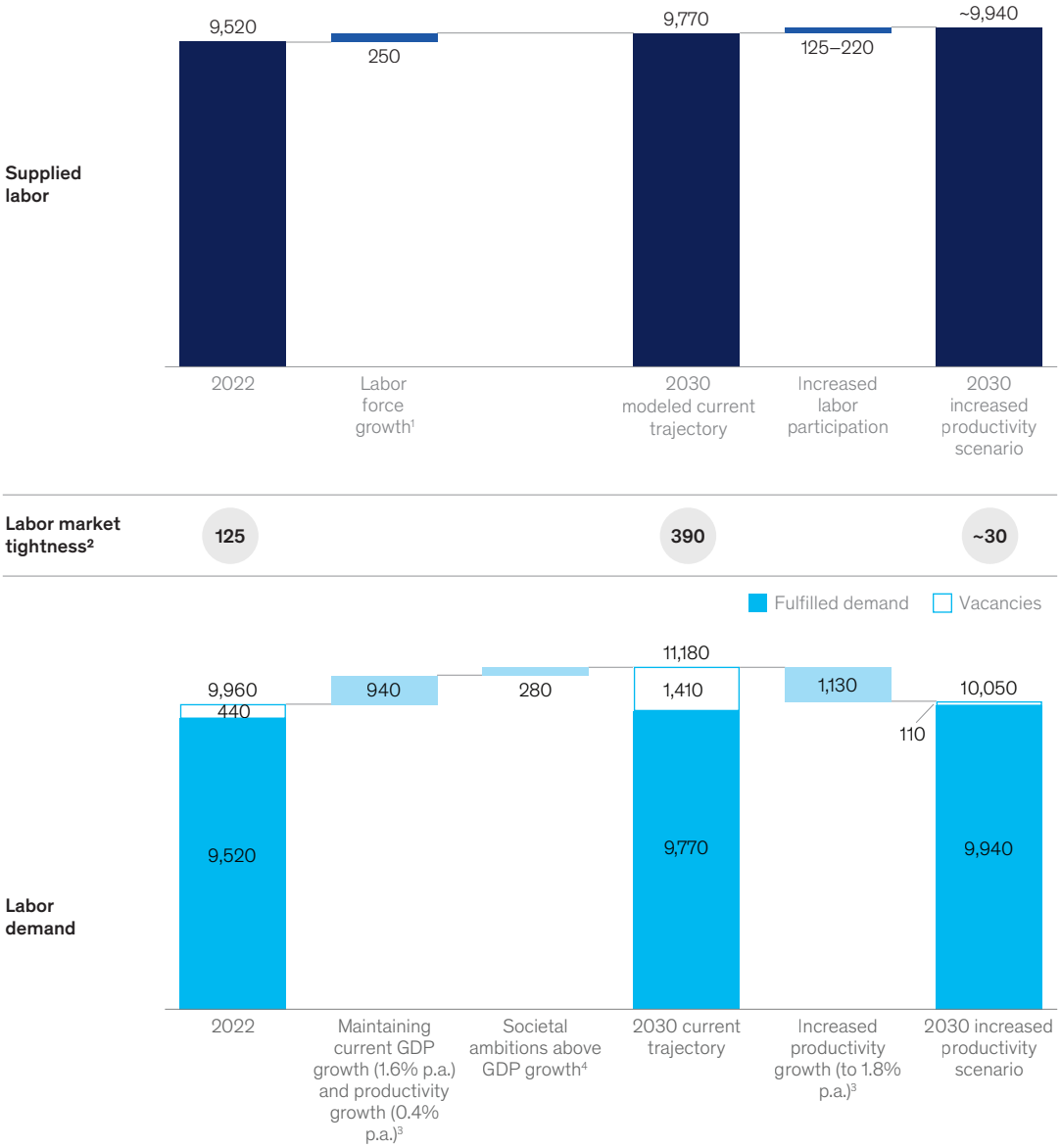
Vacancies. The number of vacancies is calculated as the difference between labor demand and supplied labor (the actual number of jobs). The number of vacancies in 2030 is projected by modeling the changes to this demand and supplied labor between the 2022 figure from CBS (approximately 440,000) and 2030. The total number of vacancies has a lower bound of 100,000 to reflect natural friction in the labor market (as seen in historic data).

Labor demand. Labor demand in 2022 is taken as the sum of supplied labor and the number of vacancies. For the projection of labor demand toward 2030, we used GDP growth and labor

Exhibit A1

Tightness in the Dutch labor market could increase by 2030.

Projected labor demand and supply, thousands of people



Note: Figures may not sum, because of rounding.
[1]Equal to population growth of people aged 15–65 in the mid-scenario of the State Committee on Demographic Developments 2050.
[2]Number of open vacancies or labor shortage per 100 unemployed people.
[3]Productivity scenarios in line with McKinsey Global Institute late and mid-late automation scenarios; p.a. is per annum.
[4]Including healthcare, energy transition, high-tech sector, and housing.

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productivity growth. For the base scenario, we used GDP growth of 1.6 percent per year and labor productivity growth of 0.4 percent per year from 2010 to 2022. For the increased-productivity scenario, we used productivity growth of 1.8 percent per year, in line with the slower Europe scenario outlined in the MGI report *A new future of work: The race to deploy AI and raise skills in Europe and beyond*. On top of the labor demand coming from GDP growth, we have included

additional labor demand from the societal ambitions of healthcare, construction, and the energy transition.

$$\text{Labor demand 2030} = \text{Supplied labor 2022} * \frac{1 + \text{Labor demand growth 2022–30}}{1 + \text{Productivity growth 2022–30}} + \frac{\text{Societal ambitions 2022–30}}{1 + \text{Productivity growth 2022–30}} + \text{Vacancies 2022}$$

Supplied labor. Supplied labor is based on CBS data on the 2022 employed working population (15- to 75-year-olds, 9.5 million) and is expected to grow in line with the working population growth of 0.3 percent per year, consistent with expectations from the State Committee on Demographic Developments 2050 for the population of 15- to 65-year-olds. Additionally, increased participation potential of the current population (125,000 to 220,000 head count equivalent) is added to the supplied labor. This potential is based on expert input and consists of increased participation past retirement age (more years), giving more hours to part-time workers (more hours), and untapped potential of people currently without a job (more people) specified in Exhibit 13 in chapter 2.

Impact of socioeconomic discussions

We focused on 11 topics that have received the most attention in recent socioeconomic discussions. For each topic, we calculated the swing in employment for low, base, and high scenarios. These scenarios were developed based on quantitative and qualitative sector-specific inputs from media and public debates, such as levels of emissions, growth of a sector, talent, or accepted levels of service. The base scenario is based on current policy, with the low and high scenarios showing potential deviations from this base development.

Labor market demand

This report draws on the methodology and findings from three recent McKinsey Global Institute reports: *Generative AI and the future of work in America, The economic potential of generative AI*, and *A new future of work: The race to deploy AI and raise skills in Europe and beyond*.[105] The technical appendixes of those reports include full descriptions of the methodology used. Below is a brief summary of the methodology and how it was applied to produce the findings of this report.

Employment. Our analysis draws on aggregated employment and growth projections from Eurostat and Statistics Netherlands (CBS). Our analysis does not seek to predict overall employment levels; rather, it models various factors driving labor demand to understand how occupational composition may change.

Automation potential and adoption scenarios. To analyze the impact of automation on work activities, the MGI model breaks down some 850 occupations into about 2,100 constituent activities using data from O*NET OnLine. Each activity was further mapped to a set of

18 capabilities required to perform that activity. For all 18 capabilities, we assessed current availability of technology and scenarios for future availability across required proficiency levels. This helped us assess the automation potential for an activity both today and in the future. This potential at an activity level was further aggregated by time spent on those activities in an occupation to calculate occupation-level automation potential. These occupational estimates were then aggregated at sector and country level by a weighted average of employment in respective occupations to estimate overall impact.

Scenarios for automation adoption. Several factors can hinder or enable the timing and pace of adoption. Solutions requiring different technologies have varying levels of ease of integration. It takes time to integrate capabilities into current technical platforms and combine them into an organic entity. Further, these solutions have to be economically feasible relative to the labor cost or wages to allow organizations to implement them at scale. Barriers also exist on the organizational side. Workers' skills and organizational structures might act as bottlenecks to implementation. Policies and regulations can also affect the pace of technology innovation and adoption. Finally, depending on their preferences, consumers might have varying levels of acceptance for automated solutions, which could affect the pace of adoption. To incorporate all these factors, we used the mathematics of the Bass diffusion model, a well-known and widely used function in forecasting, especially for new-product-sales and technology forecasting.

$$f(t)/(1-F(t)) = p + qF(t)$$

F(t) is the installed base fraction (that is, adoption of a given technology or product) and f(t) is the corresponding rate of change.

We then simulated two scenarios for historic technology adoption curves. The fitted values of parameters p and q are consistent with historical adoption curves for multiple technologies. It takes about five years to reach 50 percent adoption in the earliest scenario and approximately 16 years in the latest scenario.

Impact of automation on productivity. In our model we used GDP per full-time-equivalent employee (FTE) as the measure of productivity. To measure automation's effect on productivity, we first calculated the number of FTEs affected by automation by multiplying the projected number of FTEs in 2030 by the estimated automation adoption rate. To maintain consistency with other data sources, we made several additional assumptions. We considered only job activities that are currently available and well defined as of the date of this report. Also, to be conservative, we assumed automation has a labor substitution effect but no other performance gains. Finally, we created a scenario in which FTEs displaced by automation rejoin the workforce at 2022

This report draws on the methodology and findings from three recent McKinsey Global Institute reports.

productivity levels. Under the assumptions outlined above, we first calculated the additional GDP impact of FTEs rejoining the labor force after the defined automation adoption scenario as follows:

Additional GDP from displaced FTEs rejoining the economy
=
FTE impact of automation adoption
*
productivity of 2022

The additional GDP is then added to 2022 GDP to derive the productivity impact and its growth over 2022–30.

Impact of the net-zero transition. The European Union has made international commitments to reduce greenhouse gas emissions to net zero by 2050. We examined the impact of this commitment on jobs using a scenario-based analysis drawing on the approach used by NGFS (scenario REMIND-MAgPIE 2.1-4.1, published in June 2022). We built on previous McKinsey research assessing the impact at a global level to analyze the specific implications for the Netherlands, adding sectoral and occupational dimensions to the analysis. This net-zero analysis assumes that current supply chain composition remains the same until 2030. We considered the impact of the European Union meeting its own emissions targets as well as its role in meeting global demand for products. Jobs gained and lost are allocated as per the occupational mix of 2022. We considered job losses and gains directly and indirectly associated with the transition for operations and maintenance and capital expenditure. We did not include other macroeconomic forces such as population and income growth.

Long-term labor market trends. In estimating labor demand, we factored in six macroeconomic catalysts—rising incomes, healthcare and aging, technological innovation, infrastructure investment, education, and the marketization of unpaid work—across the economy. We captured direct and indirect jobs that could be created from each catalyst by leveraging job multipliers from input-output tables.

Trends accelerated by COVID-19. We incorporated broad trends accelerated by the pandemic that may influence labor demand and jobs in the economy through 2030, including increased remote work and virtual meetings and the shift to e-commerce and other virtual transactions.

[105] "Generative AI and the future of work in America," McKinsey Global Institute, July 26, 2023; "The economic potential of generative AI: The next productivity frontier," McKinsey, June 14, 2023; "A new future of work," May 21, 2024.

June 2024

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