

## US food manufacturers turn to people and robots to meet increased demand

Food processors are doubling down on their investments in automation and robotisation in reaction to rising labour shortages. While companies queue up to get new equipment, there is still an opportunity for new job creation



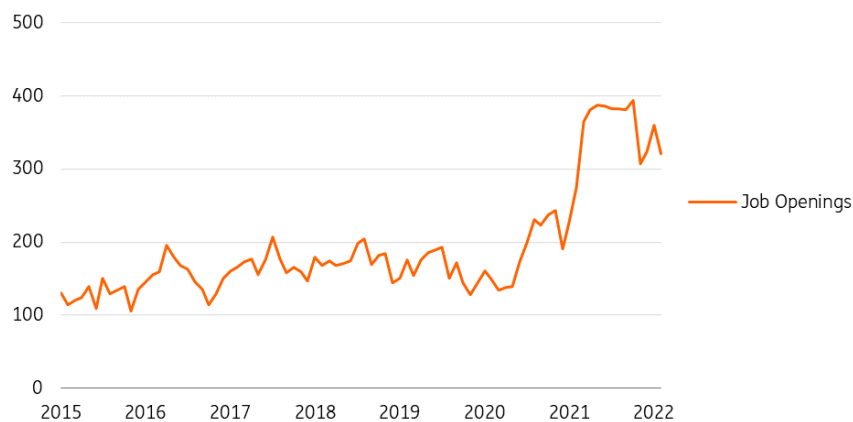
An increase in robots and jobs can go hand-in-hand

### US food manufacturers are struggling to attract workers

In 2021, employment in US food and beverage manufacturers grew to more than 1.93 million people, reaching a new record high. Since the huge rise in unemployment in April 2020 due to the Covid-19 pandemic, the US labour market has been experiencing [a strong recovery](#) that has left many sectors and companies struggling to fill vacancies and retain employees. In non-durable manufacturing, which includes food and beverage manufacturing, the number of job openings is more than twice as high as before the pandemic, and people are switching jobs more often.

## Number of monthly job openings has been rising...

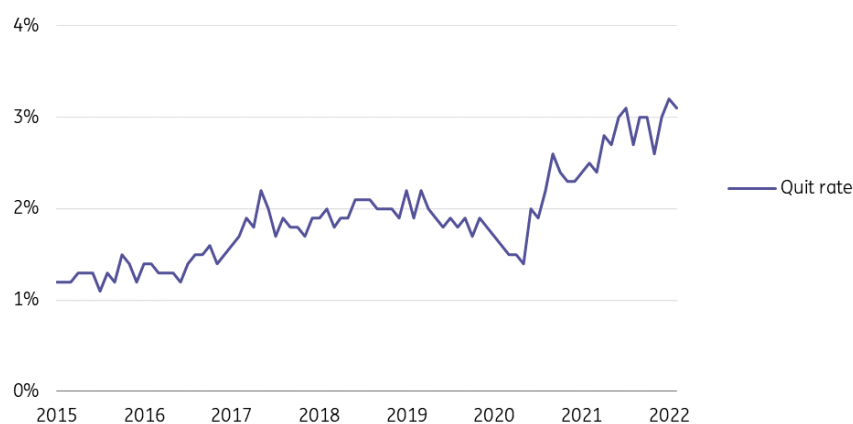
Job openings (000s) in non-durable manufacturing, monthly data



Source: Macrobond, ING Research, \*food manufacturing makes up 35% of total employment in non-durable manufacturing

## ... and quit rates are historically high

Quit rate (proportion of people quitting their job to move to a new employer) in non-durable manufacturing, monthly data



Source: Macrobond, ING Research, \*food manufacturing makes up 35% of total employment in non-durable manufacturing

## Companies queue up for machinery due to automation drive

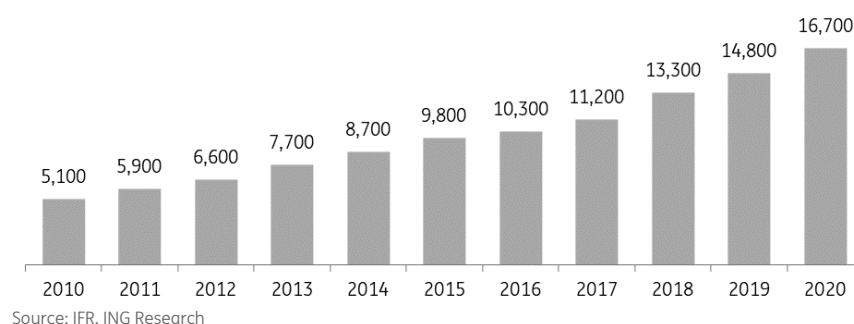
Apart from raising wages and introducing initiatives to improve other employee benefits, companies are also turning towards automation and robotisation to keep up with consumer demand. Payback times for investments have shortened compared to the pre-Covid era as labour costs have gone up and technology has improved further. A general increase in operating profits in food manufacturing over the last two years has given many companies more space in financial terms. As more and more food manufacturers turn to automation, companies face increased waiting times for equipment due to full order books at suppliers. As a result, the implementation of automation projects will be spread out over time, meaning labour constraints will prove sticky for the time being.

## Robot numbers are growing

The tight labour market has helped to make automation and robotisation a key topic for food and beverage manufacturers. Labour costs and the general availability of labour are, in our view, one of the three structural drivers for robotisation ([read here to find out the other two](#)). US food manufacturers made sizeable investments in robotics in 2020 and the number of new robot installations reached its second-highest level in history. This indicates that companies were able to pursue such investments in a situation with severe pressure on food supply chains and the temporary closure of some facilities due to Covid infections.

## Steady increase in the number of robots in the US

Total robot stock in US food and beverage manufacturing

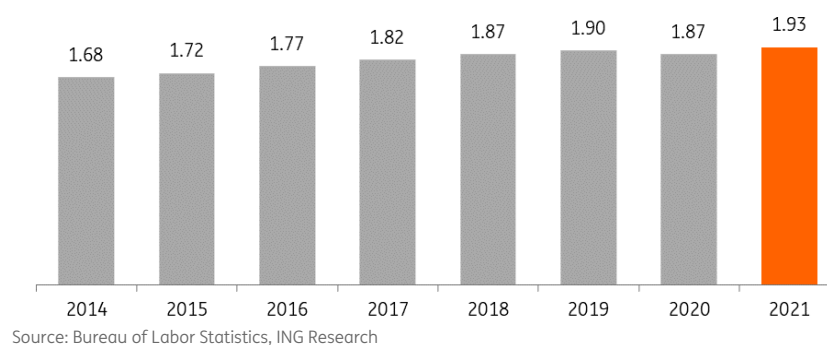


## Number of jobs in production rises...

Growth in robot numbers and employment can go hand-in-hand. Employment in US food and beverage manufacturing has been growing at a steady rate. While employment decreased in 2020 due to the Covid pandemic, the rebound in 2021 was strong. Within food manufacturing, most of the work is staged around the production line and roughly one in two employees fulfils a production job. As robots are mainly employed to perform tasks along the production line, one would expect production jobs to be most affected by the increase in robot numbers. Yet, the number of jobs in production occupations has grown by approximately 15,000 between 2015 and 2021.

## Total employment reached a new high in 2021

Number of jobs in food and beverage manufacturing in the US, million jobs

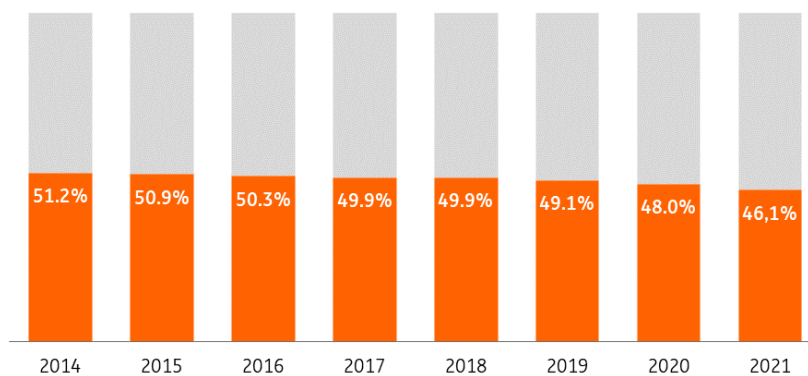


## ...but the typical production job is losing out to other jobs

However, a closer look at the data shows a downward trend in the share of production jobs within total employment. While this is happening at a slow rate, production work is losing out compared to other jobs. Gradually the nature of the production work in food manufacturing is evolving from, for example, picking cookies by hand and putting them in a box, to supervising a robot that does that work automatically. So besides attracting people to keep production lines running in the short term, for food makers it's also about training or hiring people with a more technical skillset to enable automation.

## Share of production jobs is declining at a slow pace

Share of production jobs in total employment in food and beverage manufacturing in the US



Source: Bureau of Labor Statistics, ING Research

## Why an increase in robots and jobs can go hand-in-hand

If robot numbers grow, how can the number of jobs also increase? In our view, there are five main reasons:

1. Global demand for food is rising and US food production is increasing its volumes to cater to this demand.
2. Robots help to increase the competitiveness of businesses and that enables companies to grow their output and enter new markets.
3. Major (packaged) food companies are leading the way in the robotisation of the industry, but at the same time, food manufacturing consists of many small and medium-sized enterprises (SMEs) for whom a lack of scale is hindering automation. This makes them more dependent on labour.
4. Among these SMEs, there is a large group of craft and artisanal food makers where manual labour is one of the elements that distinguishes them from food corporates. Those companies differentiate themselves on high touch and robots don't add to that positioning.
5. Consumer demand has been shifting from packaged food (like dried, canned and frozen products) to more convenience fresh food (like produce, deli and fresh meats). This trend is unfavourable for automation. The production of packaged food is more standardised and thus easier to automate while fresh food companies produce a diverse range of products on a daily basis making it more difficult to introduce robotics.

## In food manufacturing it's people and machine, not people or machine

While automation, and robotics in particular, get a lot of attention in US food manufacturing, the future of food production very much lies in the hands of both people and machine. Human capital remains a very important asset because there are still many tasks where robots can't match a human. Furthermore, running an automated production line still requires human supervision. So while food manufacturers have their eyes set on automation to solve some of their challenges, investing in their labour force continues to be an integral part of the solution.

### ESG and automation: what about the social impact?

Besides their contribution to productivity, robots can also reduce repetitive and dangerous work in production processes, enhance workplace safety, and create a safe culture within companies. Improvement in employee wellbeing, less absenteeism, and fewer accidents can strengthen the financial results of operations by reducing incident-related costs, thereby leading to sustainable long-term value creation.

Sustainable reporting frameworks and environmental, social and corporate governance (ESG) rating agencies have identified employee health and safety as a material issue for food manufacturers. The Sustainability Accounting Standards Board and the Global Reporting Initiative have also released detailed standards on how to disclose information related to workplace health and safety.

Under such a context, food companies like Tyson and Cargill have started voluntarily reporting on metrics such as the reportable injury frequency rate and serious injury and fatality rate. Tyson has also set up annual goals to reduce accident recordables by 10% year-on-year.

The US Securities and Exchange Commission's newly-released draft rules on climate-related data disclosure for listed companies [will accelerate this momentum](#). Eventually, although not a decisive factor, food manufacturers that not only disclose but also better handle workplace safety issues could receive higher ESG scores, and robots are here to help. Improved ESG scores could then add to higher investor and consumer confidence. Conversely, major incidents at workplaces can lead to financial losses and reputational damages.

### Author

#### Thijs Geijer

Senior Sector Economist, Food & Agri

[thijs.geijer@ing.com](mailto:thijs.geijer@ing.com)

#### Coco Zhang

ESG Research

[coco.zhang@ing.com](mailto:coco.zhang@ing.com)

### Disclaimer

This publication has been prepared by the Economic and Financial Analysis Division of ING Bank N.V. ("ING") solely for information

purposes without regard to any particular user's investment objectives, financial situation, or means. *ING forms part of ING Group (being for this purpose ING Group N.V. and its subsidiary and affiliated companies).* The information in the publication is not an investment recommendation and it is not investment, legal or tax advice or an offer or solicitation to purchase or sell any financial instrument. Reasonable care has been taken to ensure that this publication is not untrue or misleading when published, but ING does not represent that it is accurate or complete. ING does not accept any liability for any direct, indirect or consequential loss arising from any use of this publication. Unless otherwise stated, any views, forecasts, or estimates are solely those of the author(s), as of the date of the publication and are subject to change without notice.

The distribution of this publication may be restricted by law or regulation in different jurisdictions and persons into whose possession this publication comes should inform themselves about, and observe, such restrictions.

Copyright and database rights protection exists in this report and it may not be reproduced, distributed or published by any person for any purpose without the prior express consent of ING. All rights are reserved. ING Bank N.V. is authorised by the Dutch Central Bank and supervised by the European Central Bank (ECB), the Dutch Central Bank (DNB) and the Dutch Authority for the Financial Markets (AFM). ING Bank N.V. is incorporated in the Netherlands (Trade Register no. 33031431 Amsterdam). In the United Kingdom this information is approved and/or communicated by ING Bank N.V., London Branch. ING Bank N.V., London Branch is authorised by the Prudential Regulation Authority and is subject to regulation by the Financial Conduct Authority and limited regulation by the Prudential Regulation Authority. ING Bank N.V., London branch is registered in England (Registration number BR000341) at 8-10 Moorgate, London EC2 6DA. For US Investors: Any person wishing to discuss this report or effect transactions in any security discussed herein should contact ING Financial Markets LLC, which is a member of the NYSE, FINRA and SIPC and part of ING, and which has accepted responsibility for the distribution of this report in the United States under applicable requirements.

Additional information is available on request. For more information about ING Group, please visit [www.ing.com](http://www.ing.com).