THE fDi REPORT 2022

Global greenfield investment trends

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A world in flux seen through the FDI lens

The world is in flux and the **fDi** Report 2022 provides a fascinating insight through the lens of foreign direct investment (FDI).

Based on our proprietary **fDi** Markets database, which is the world's most comprehensive service for tracking and analysing crossborder greenfield investment, the report outlines the traits of the fresh investment cycle that has emerged from the Covid-19 pandemic.

There are three major forces shaping up this new cycle: sustainability, the digital economy and supply chain restructuring, which has largely become a more elegant term for protectionism.

Sustainability, particularly in reference to the energy transition, has redrawn patterns of global investment. For the third year in a row, the renewable energy sector is the biggest recipient of FDI across all sectors, once again dethroning the oil and gas sector, which had traditionally held the leadership until 2019 (see page 6). Electric mobility, another corollary of the energy transition, is breathing new life into an ailing automotive sector as original equipment manufacturers (OEMs) set in motion multi-billion strategies to electrify their production base. More sustainable lifestyles also create room for innovation and new industries that rapidly become sources of FDI like alternative meat (see page 20).

The rise of the digital economy has been an equally disruptive trend for FDI. The pandemic unleashed further demand for digital infrastructure, devices and services. Amazon, with its double-headed business empire combining cloud infrastructure and e-commerce, stood out as the most active foreign investor in 2021 (see page 28). The communications sector as a whole was the second largest recipient of FDI in 2021, with software & IT services also in the top 10.

Ubiquitous microchips enable the digital economy and no sector experienced the vertiginous FDI growth seen in semiconductors in 2021. Booming demand for microchips from across the board led to severe supply bottlenecks, which in turn prompted producers to start mega investment campaigns in new capacity, with FDI into the sector increasing almost five-fold last year (see page 12).

Market dynamics are half of the story here, though. The other half traces back to supply chain disruptions. The pandemic, as well as other occurrences like energy shocks, the Suez canal obstruction in March 2021 and Brexit have strengthened the argument for shorter, more resilient supply chains. Combined with the kind of industrial policies arguing in favour of technological sovereignty and the control of key industries – semiconductors but also electric vehicle batteries among others – investors have been reassessing their global footprint, or at least have been encouraged to do so by governments in their home countries.

Microchip producers not only bumped up their investment budgets, they also redistributed it geographically to locate new production close to final customers in the US, Europe and Japan, or back to their home market altogether in Taiwan or South Korea.

China has paid a toll for all this. Despite the economy already bouncing back to pre-Covid levels by the end of 2020, greenfield FDI has yet to recover and remains close to historic lows as manufacturers diversify their global footprint away from China. Meanwhile, services companies willing to cater to the burgeoning domestic market are still walking on eggshells because of a challenging regulatory and business environment. The draconian zero-Covid policy, which carried into the first half of 2022, has not helped either.

Overall, though, among hiccups and inequalities, global FDI has been in recovery mode throughout 2021. The Ukraine war casts a shadow on this recovery as it creates even deeper geopolitical fractures, higher barriers to cross-border investment, and more fragmented supply chains. Inflation is also driving more conservative monetary policies that bring down the overall amount of capital available for capital expenditure. With less quantity, the emphasis falls on quality – high-impact investment will define the success of investment promotion strategies in the years to come (see page 8).

> There are three major forces shaping up this new cycle: sustainability, the digital economy and supply chain restructuring

Jacopo Dettoni is the editor of **fDi** Intelligence, *the Financial Times' specialist unit dedicated to foreign direct investment.*

Global overview

Foreign investors announced a total of 13,169 foreign direct investment projects during 2021, according to **fDi** Markets, the greenfield investment monitor of the Financial Times. These projects involved a total capital investment of $610bn and created more than 1.6 million jobs. In 2021, the number of FDI projects rebounded by 11% from 2020, with the value of capital investment and total job creation jumping by 12% and 21%, respectively, in the period.

The US retained its spot as the top destination country, attracting $81.7bn of FDI in 2021, an increase of $20bn from 2020. It was also the top source country for FDI investments, accounting for 22% of the FDI projects announced globally in 2021. In addition, the US was the top source destination globally for capital investment, with outflows of $149.6bn recorded in 2021. This represents a market share of 25%.

On a regional level, Asia-Pacific was the top destination region for FDI in 2021, when measured by capital investment. The region attracted $165.8bn worth of capital investment inflows last year.

Western Europe attracted the highest number of FDI projects in 2021, with 4795 announcements recorded.

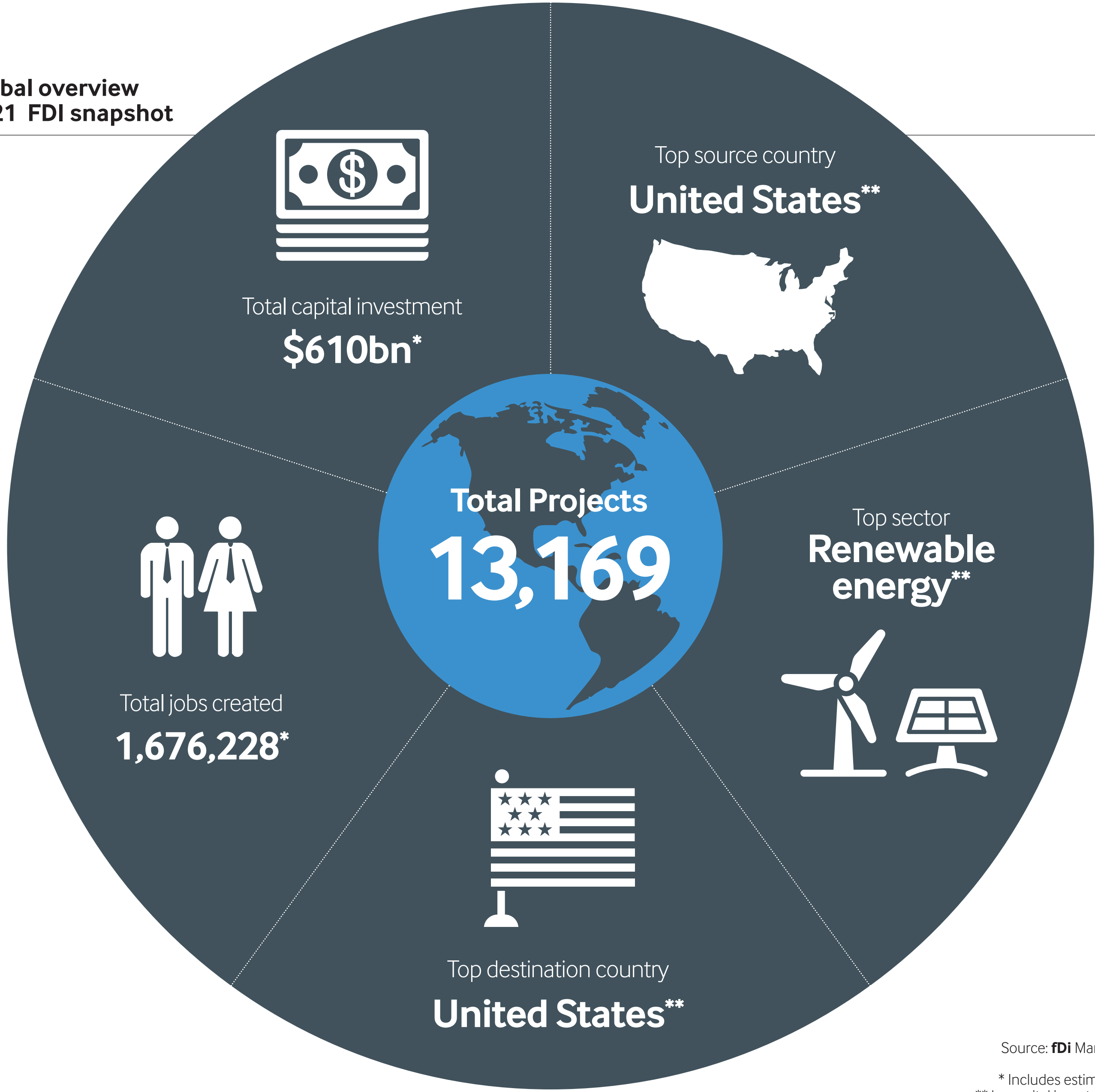
Key trends in 2021 include:

- Renewable energy retained its position as the top sector by capital investment in 2021. Despite a drop from 2020 when capital expenditure reached $91.6bn, the renewables industry accounted for $85.2bn in 2021.

- The semiconductor sector saw the largest growth in capital investment in 2021 from 2020. Investments in semiconductor FDI projects rose to $59.1bn last year, almost four times what it recorded in 2020.

- After overtaking China in 2020, India remained the top destination for FDI in Asia-Pacific by project number, with a total of 435 projects recorded.

**Global overview
2021 FDI snapshot**



Source: **fDi** Markets

* Includes estimates
** by capital investment

The big numbers

IN 2021...

13,169

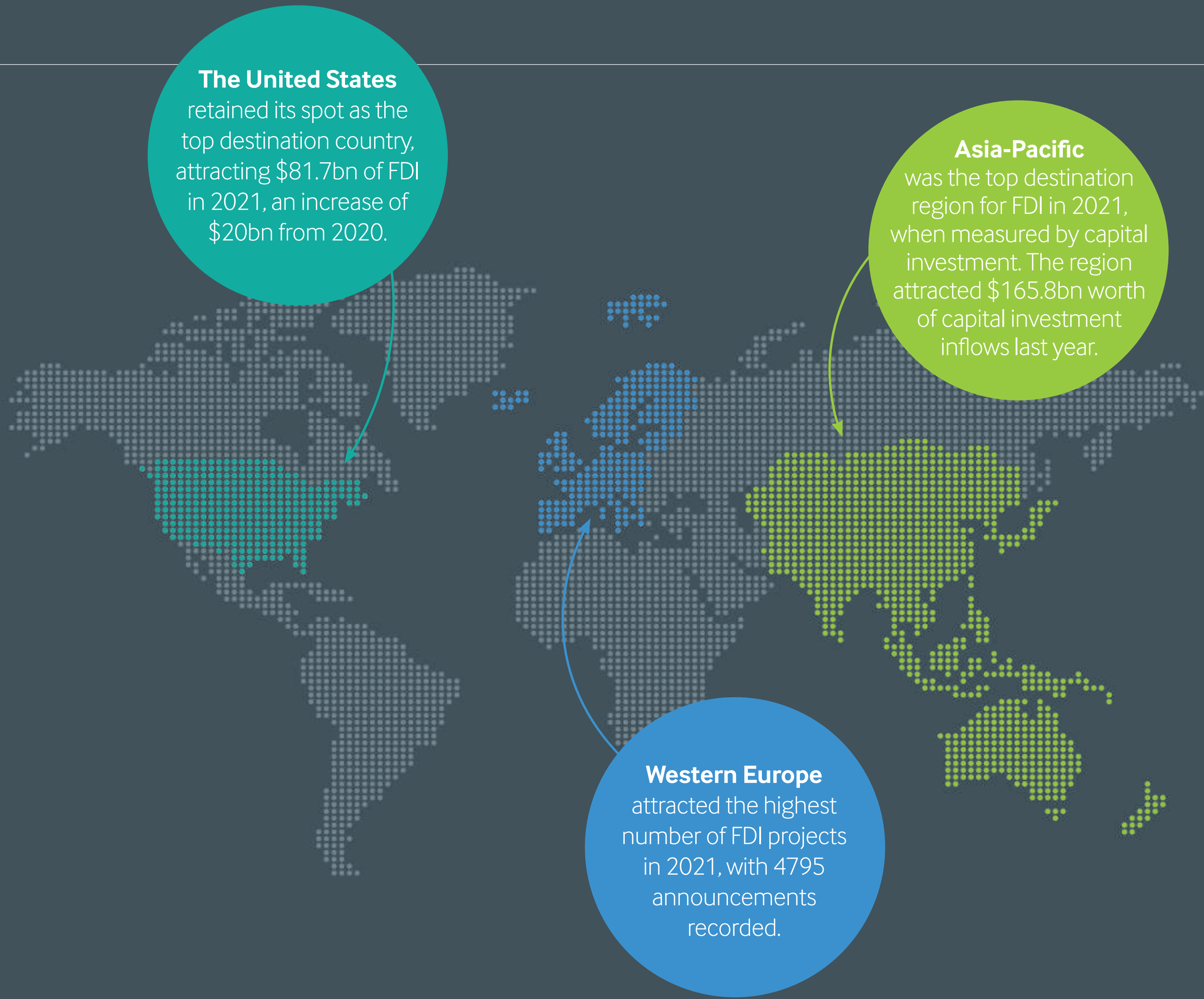
Foreign investors announced a total of 13,169 foreign direct investment projects during 2021

11%

In 2021, the number of FDI projects rebounded by 11% from 2020

1,676,228

Announced FDI projects created more than 1.6m jobs



The 2021 investment matrix

• For the second year running, the global renewable energy sector has attracted the highest total capital investment, with $85.2bn in announced FDI across 466 projects. While this represents a 7% decline on 2020, the fall in coal, oil and gas, real estate, and other capital-intensive sectors has allowed for renewable energy to remain the top ranked sector.

• Ranked second, capital investment into the communications sector rose to $72.2bn in 2021, up by $11.9bn from 2020. The sector also saw strong growth in project numbers, with an increase of 143 projects in the period to a total of 833 projects.

• Global investment in the semiconductors sector totalled $59.1bn in 2021, ranking the sector third globally. The number of projects nearly doubled to 104, seeing growth even on its 2019 performance.

• The software & IT services sector recorded a notable increase in project numbers in 2021, increasing by 29% from 2351 in 2020 to 3032 last year - falling slightly short of its 2019 level. Job creation in the software sector rose by 103,000 to nearly 252,000 in 2021.

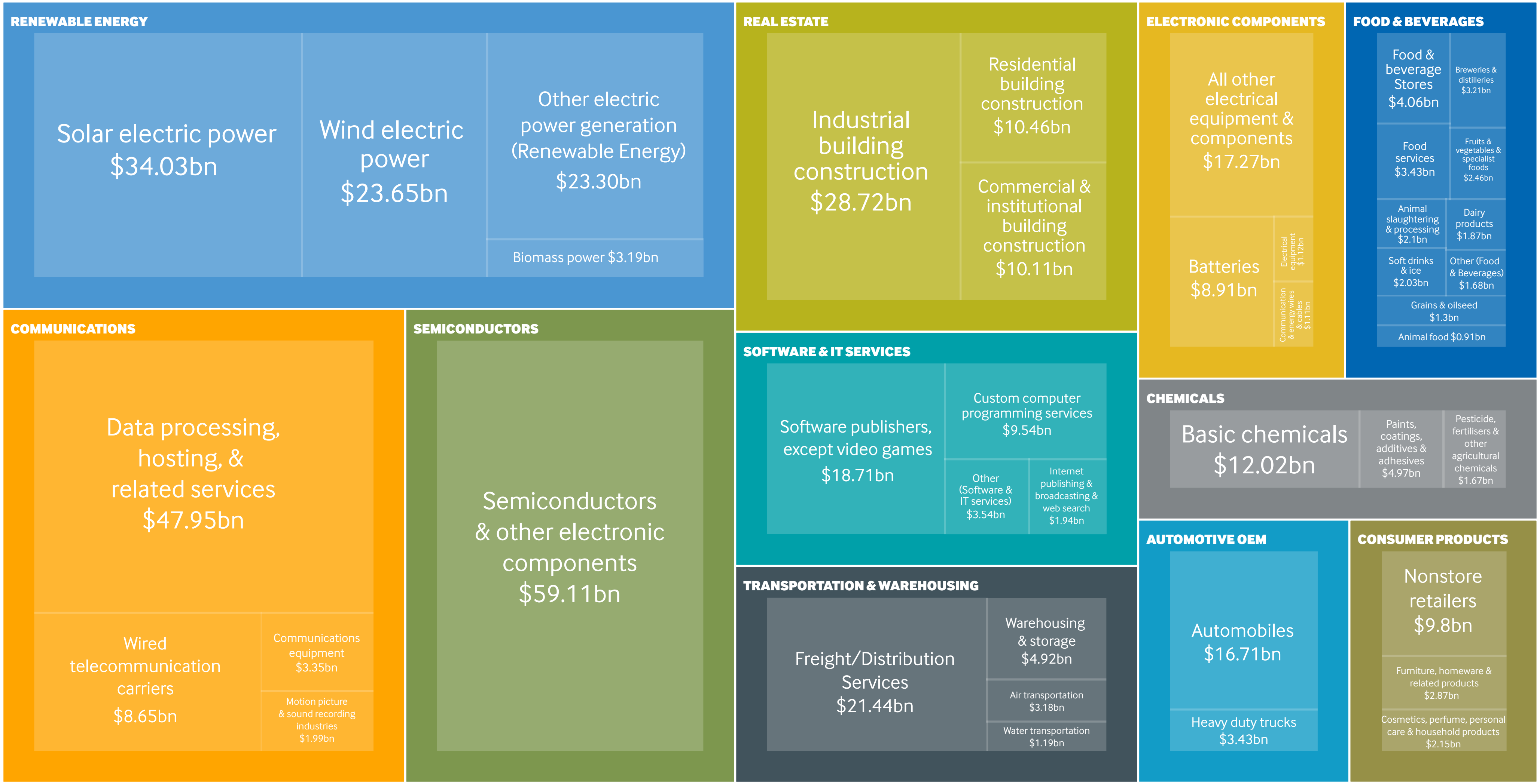
• The consumer electronics industry performed strongly in 2021 with capital investment increasing by 241% from the previous year to $4.8bn despite the number of projects declining slightly from 75 in 2020 to 72 in 2021. Corresponding growth can be seen in the electronic components sector, which saw a 6% increase in project numbers and a 42% increase in capital investment to $29.5bn in 2021 over 2020.

• Amid growing uncertainty surrounding the future of real estate investment, the number of projects in the real estate sector remained half the total recorded in 2019. Nevertheless capital investment in the sector rose from $34.6bn in 2020 to a total of $50.3bn in 2021. Both the metals and building materials sectors showed positive growth, with capital investments of $17.4bn and $4.9bn respectively, equating to increases of 80% and 120% in 2021 on 2020 figures.

• FDI in the food & beverages sector increased in 2021 with 628 announced projects and $27.4bn in capital investment. This represents a 13% increase in the number of projects from 2020 and a $3.7bn rise in the value of FDI, all the while emerging sub-industries such as alternative proteins and plant-based foods seek to disrupt traditional agriculture and promote food security. Given the war in Ukraine has caused a major shock to global commodity prices, reflecting the region's importance in those markets, and the growing list of firms suspending activities in Russia, the food & beverages industry looks set to undergo a major shift in supply chains.

• The hotels & tourism and leisure & entertainment sectors struggled to rebound in 2021, and ranked as two of the weakest performing sectors. The two sectors have seen combined capital investment in 2021 fall to 15% of the 2019 total.

TOP 10 SECTORS IN 2021 BY CAPITAL INVESTMENT (US$BN)



Source: **fDi** Markets
Note: Includes estimates

Making investment promotion work for sustainable development

Ana Novik, head of investment, OECD

Even before Covid-19, it was estimated that achieving the Sustainable Development Goals (SDGs) required financing of $2.5tn per year. This gap may since have increased by 70%. Meanwhile, fulfilling the commitments made in the Paris Agreement to curb climate change requires investment in renewable energy to triple by 2030. Foreign direct investment (FDI) is an important source of finance to help meet these global commitments to sustainable development, but beyond the quantity of FDI, its quality also matters.

Forthcoming OECD data on sustainable investment show that FDI creates 180 000 jobs per month and accounts for around 30% of new investments in renewable energy. The OECD FDI Qualities Indicators also find that foreign firms are 50% more likely to offer formal training opportunities, 25% more likely to introduce new products, and 60% more likely to invest in R&D (see figure on page 9). They are also three times as likely to incorporate climate and environmental issues in their strategic objectives, 60% more likely to monitor their energy use, and 30% more likely to implement measures to reduce environmental impacts.

These effects can vary considerably across countries and are influenced by many factors such as size and sector of the investment, investors' motivations and corporate culture, as well as whether it is a new project or an acquisition. But beyond project characteristics, the investment environment of the host country – including natural and human resources, industrial capacity, and policy conditions – strongly shapes impacts.

Among countries receiving FDI, some have benefited more than others and, within countries, some segments of the population have been left behind. While FDI creates many jobs and contributes to raising overall living standards by offering high wages, it can also worsen income inequalities, potentially leaving the less-skilled segments of the population behind. Moreover, in Southeast Asia, the Middle East, and Africa, foreign firms help to reduce employment gaps between women and men, while there is little evidence of this in other regions. Foreign firms also do not necessarily offer better career advancement opportunities for women.

Investment promotion agencies (IPAs) have a key role to play in attracting FDI and bridging information gaps that could hinder foreign investments and any potential sustainable development impacts. IPAs can use the FDI Qualities Indicators to better understand the effect of FDI in meeting national sustainable development objectives and define their investment promotion strategy accordingly. Most IPAs prioritise certain types of investments over others, whether by sector, country or investment project. The approaches and tools adopted by IPAs increasingly aim to attract investment that supports national sustainable development priorities.

> Foreign firms are 50% more likely to offer formal training opportunities, 25% more likely to introduce new products, and 60% more likely to invest in R&D

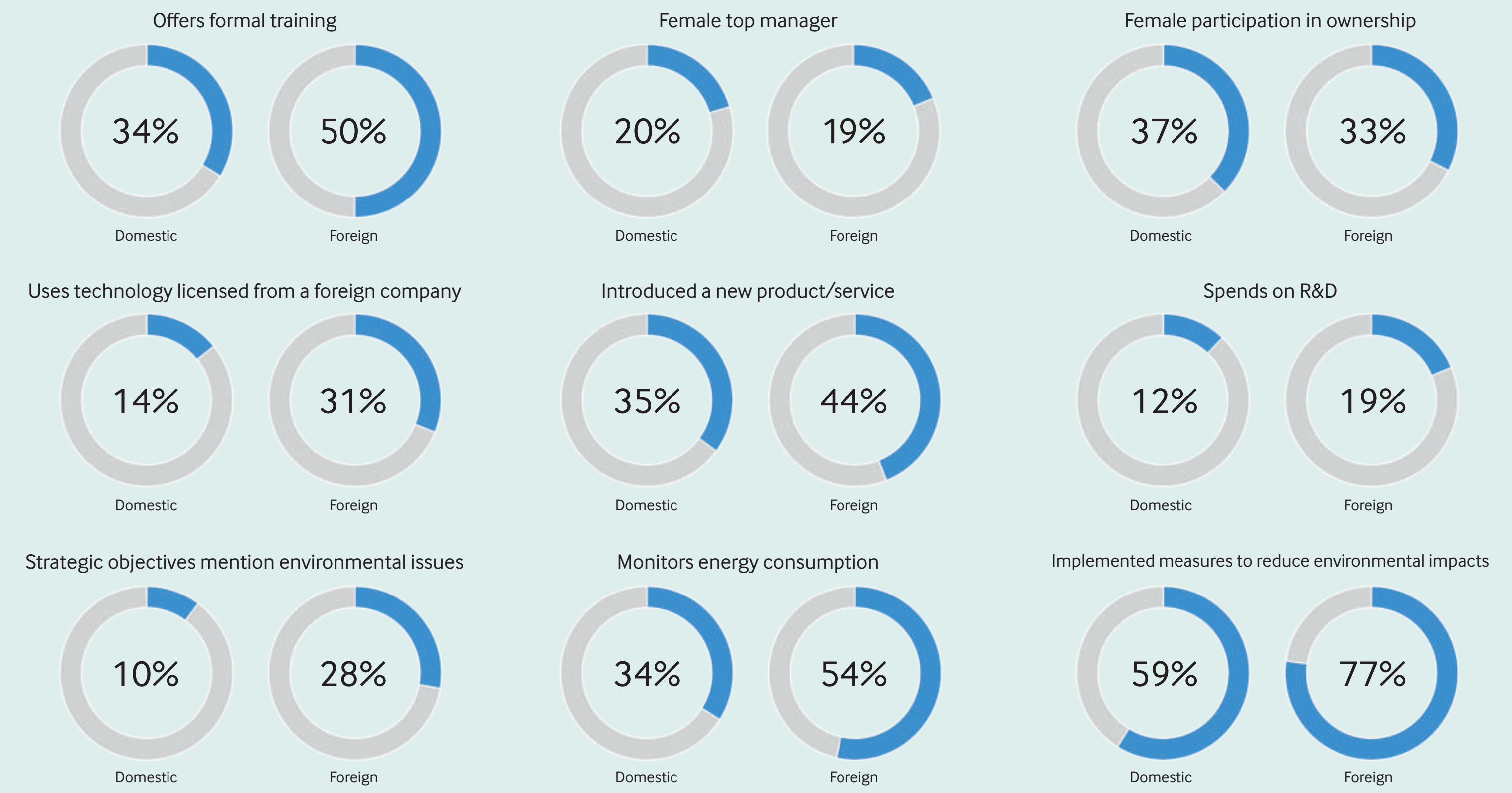
A recent OECD survey shows that sustainable development considerations are important for IPAs when setting their prioritisation strategy: nine out of ten IPAs in OECD countries use productivity and innovation performance indicators to prioritise investment attraction, and the same proportion wants to understand how investment impacts job creation and skills. About half use low-carbon transition-related indicators. Much fewer IPAs use this kind of information for monitoring and evaluation. This means that sustainability is not yet sufficiently tracked and taken into consideration in efforts to attract FDI.

While IPAs prioritise and attract new investments to fulfil their sustainability goals, they also support existing investors by breaking down information barriers and allowing foreign firms to identify local suppliers for future collaboration. Through these aftercare activities, IPAs should also consider promoting responsible business conduct and encouraging investors to more systematically comply with laws, such as those on the respect for human rights, environmental protection, labour relations and financial accountability, as well as to embrace sustainable practices.

Additionally, FDI can also give governments a sense of what types of jobs and skills will be in demand in the future, and could thus be integrated into governments' skills anticipation systems. Some countries have their IPAs represented in national skills development bodies, in charge of anticipating future skills needs and proposing measures to address gaps. This allows them to provide updates on sectoral investment opportunities and advice on skills availability.

But the task of leveraging FDI for sustainable development is by no means one that IPAs should tackle alone. The OECD works closely with governments around the world through the FDI Qualities Initiative to work out how policy can encourage quality investment. This requires a whole-of-government approach, which our Policy Toolkit, together with the Indicators, will help countries define. IPAs' policy advocacy could also play a role here. By making the link between investment and broader objectives, FDI can help build societies that are greener, with better quality jobs and higher skills, improved gender equality, as well as more productive and innovative.

SUSTAINABLE DEVELOPMENT PERFORMANCE OF FOREIGN AND DOMESTIC BUSINESSES



Source: OECD based on World Bank Enterprise Surveys (2022)

Asia-Pacific

Key Trends in 2021 include:

• FDI projects into Asia-Pacific increased by 10% in 2021 from a year earlier, with 2551 projects announced. Capital investment into the region remained stable in the period, with a 0.7% increase from 2020 to $165.7bn. Outward capital investment also experienced an increase of 7% in 2021 from the previous year, as $160bn was invested by investors from the region.

• After overtaking China in 2020, India remained the top destination for FDI in Asia-Pacific by project numbers in 2021. A total of 435 projects were announced in 2021, an increase of 16% from 2020. India accounted for 3% of FDI projects globally in 2021.

• In 2021, project levels in China increased by 15% to 414 projects while job creation increased by 55%. China also secured over $29bn in capital investment in 2021, accounting for 18% of all capital investment destined for the region and 5% of the global total. Despite this growth in 2021, project levels remain low by historical standards - the average number of projects recorded between 2009 and 2019 into China was 961 FDI projects per year.

• Capital investment into Japan increased to $21.1bn in 2021, up by 64% from the previous year, despite a decrease in the number of projects. Job creation also increased, with more roles created than during 2019.

• Of the top ten countries that received the most FDI projects in Asia-Pacific in 2021, South Korea experienced the largest increase in project numbers last year, which rose from 77 in 2020 to 94 in 2021. South Korea's project levels in 2021 accounted for 4% of projects in the region.

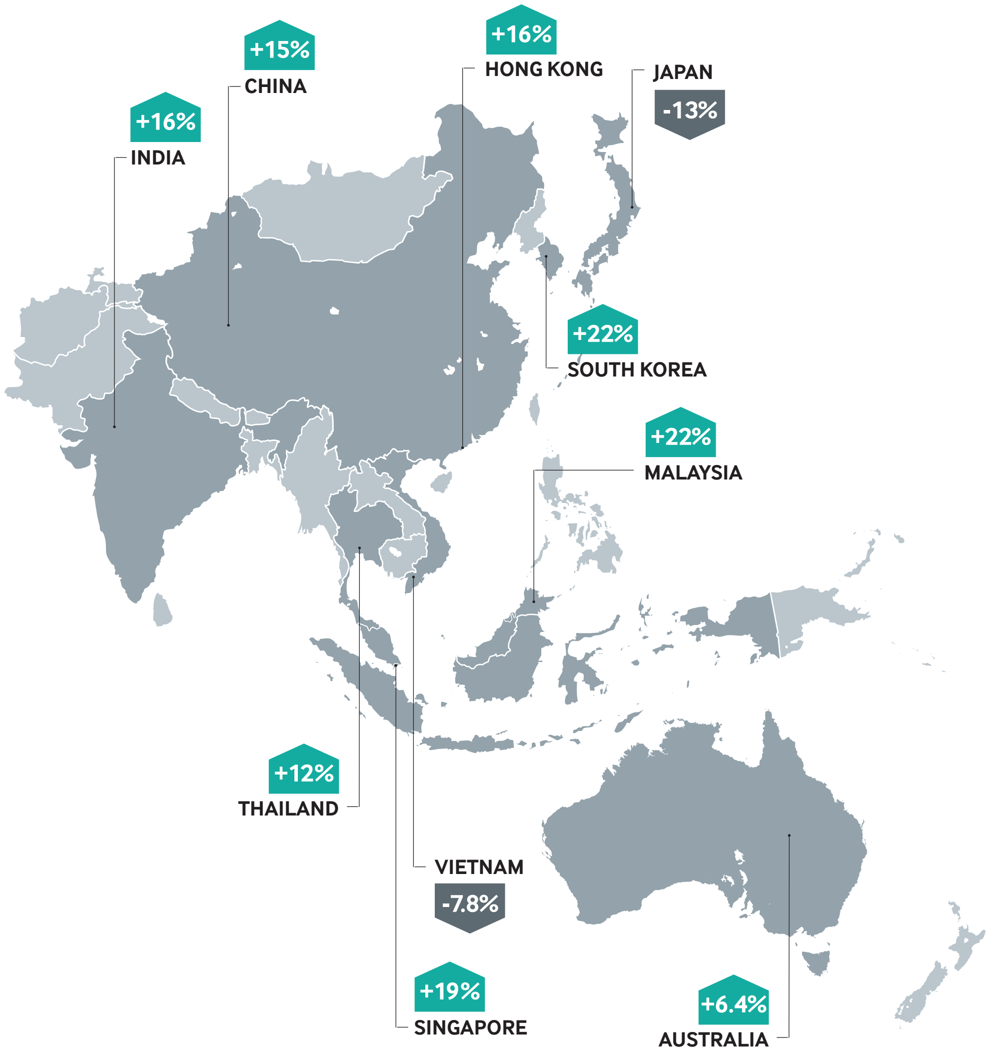
Table 1

FDI INTO ASIA-PACIFIC BY PROJECT NUMBERS IN 2021

Country	Projects
India	435
China	414
Singapore	346
Australia	315
Japan	173
Vietnam	119
Malaysia	111
South Korea	94
Hong Kong	87
Thailand	76
Other	381
Total	2551

Source: **fDi** Markets

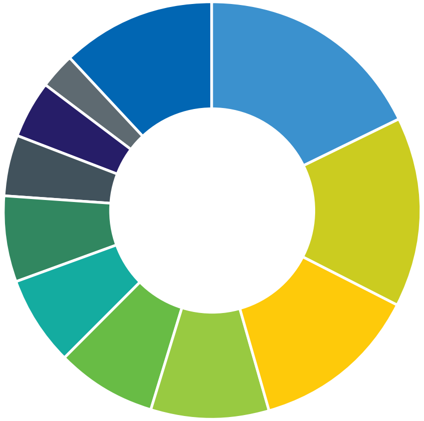
PERCENTAGE CHANGE ON 2020 BY PROJECT NUMBERS



Source: **fDi** Markets
Note: Percentages rounded up/down

Chart 1

FDI INTO ASIA-PACIFIC BY CAPITAL INVESTMENT 2021



Asia-Pacific market share %		Capital investment ($bn)
18%	China	**29.1**
15%	Malaysia	**24.7**
13%	Japan	**21.1**
9.3%	India	**15.5**
7.9%	Singapore	**13.1**
6.8%	Vietnam	**11.3**
6.7%	Australia	**11.1**
4.9%	Indonesia	**8.1**
4.5%	New Zealand	**7.4**
2.6%	Taiwan	**4.3**
12%	Other	**20.2**

Source: **fDi** Markets
Note: Includes estimates

Table 2

FDI OUT OF ASIA-PACIFIC BY CAPITAL INVESTMENT 2021

Country	Outbound $bn
South Korea	32.6
China	30.8
Japan	23.7
Singapore	17.8
Australia	15.1
Taiwan	15.1
India	12.6
Hong Kong	6.3
Malaysia	1.8
Thailand	1.3
Other	2.4
Total	159.6

Source: **fDi** Markets
Note: Includes estimates

Table 3

FDI OUT OF ASIA-PACIFIC BY PROJECT NUMBERS 2021

Country	Outbound projects
Japan	469
India	354
China	345
Singapore	241
Australia	207
Hong Kong	141
South Korea	129
Taiwan	59
New Zealand	28
Malaysia	25
Other	89
Total	2087

Source: **fDi** Markets

KEY TREND

New Zealand experienced a 4% increase in FDI project numbers in 2021 from the previous year, with 57 investments announced. The country superseded its pre-pandemic total in 2019 by 39%.

Recent major projects

- **Risen Solar Technology**, a subsidiary of China-based Risen Energy, is investing $10.1bn to open a solar module factory in the Kulim Hi-Tech Park, Malaysia. The facility, to commence output in the first quarter of 2022, will create 3000 jobs and achieve an annual production capacity of 3 gigawatts by 2026.

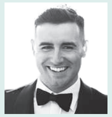
- **Taiwan-based TSMC** is to jointly build a $7.5bn computer chip plant in Kumamoto, Japan with Japan-based Sony. Once operational in 2024, the factory will process 45,000 12-inch wafers per month and will employ 1500.

- **US-based Micron Technology** has announced plans to build a new, Y800bn ($7bn) factory at its production site in Hiroshima, Japan. The new facility will manufacture dynamic random-access memory (DRAM) chips and is set to begin production in 2024.

- **US-based IT conglomerate Intel** has announced that it will invest $7bn to expand its chip packaging facility in the state of Penang, Malaysia. Located in Free Trade Zone Phase 3 of the Bayan Lepas Industrial Park, the expanded plant will focus on the development of semiconductor assembly.

Government incentives to help the West catch Asia's chip supremacy

Jonathan Wildsmith, production manager, **fDi** Markets



The semiconductor industry has increasingly become a uniquely important contributor to the global economy. The bedrock of recent economic growth lies at the heart of modern and emerging technologies that have been largely driven by the production and development of semiconductors.

The rapid adoption of digital technologies was only further amplified by the Covid-19 pandemic while the recovery of the global economy in 2021 plunged the semiconductor industry into an unforeseen spike in market demand, sparking supply chain shortages across various industries, including automobile manufacturing and consumer electronics to name a few.

The importance of consistent and secure supply chains has never seemed more crucial, with ongoing trade tensions between the US and China, and Western sanctions against Russia following its invasion of Ukraine. Economic disruption over the last decade has led governments, regulators and investors scrambling to secure chip supplies and invest in the reshoring of production.

According to **fDi** Markets data, the Asia-Pacific region has attracted over $103bn in semiconductor FDI between 2012 and 2021, which represents 57% of global FDI in the industry. Even though mega investments announced in Western Europe in 2019 and North America in 2020 sought to disrupt this chip hegemony, the Asia-Pacific reclaimed its position as the top destination market for semiconductor FDI in 2021, after having attracted 56 semiconductor FDI projects, valued at $37.5bn. Nevertheless, its chip supremacy is set to be challenged as governments in the west commit billions in funding to support the localisation of chip production.

Worldwide semiconductor revenue totalled $466.2bn in 2020, an increase of 10.4% from 2019. This increased by 25% in 2021 to total $583.5bn, crossing the $500bn threshold for the first time.
- Gartner Inc.

Clusters meet competition

Multinational professional services firm Deloitte reports in its 2022 Semiconductor Industry Outlook that the traditionally known semiconductor manufacturing clusters like Taiwan and South Korea are seeing growing competition from the US, China, Japan, Singapore, Israel and Europe. While Taiwan and South Korea are expected to hold their market share of the industry in the immediate future, Washington, Beijing and Brussels are all actively working and competing to secure semiconductor supply chains, meaning the US, China and Europe will become increasingly less reliant on chip imports from the likes of Taiwan and South Korea.

Washington has looked to bring semiconductor manufacturing back to the US or at least seek for US-owned companies to gain a greater control over the supply of chips, particularly since its protracted tensions with China substantiate a potential threat to chip supply and national security. In order to turn the tide and reduce the over-concentration of chip manufacturing in Asia, US President Joe Biden earmarked $50bn for semiconductor manufacturing and research as part of a $2tn economic stimulus package. Announced greenfield FDI projects in the semiconductor sector in 2020 and 2021 seem to support this paradigm shift in chip production returning to the US. In the last two years, the US has seen record-breaking investments from global chip powerhouses such as Taiwan Semiconductor Manufacturing (TSMC), Samsung and Intel which may indicate that chip capacity is set to return to the US.

In 2020, Taiwan-based TSMC announced plans to invest $12bn to establish a semiconductor manufacturing plant in Phoenix, Arizona, US. And last year, Korean electronics giant Samsung announced its $17bn semiconductor fabrication plant to be built in Texas with US chipmaker Intel also announcing its plans to invest a total of $40bn to open new semiconductor chip fab plants in Arizona and Ohio. These investments, buoyed by the prospect of $52bn in federal funding under the CHIPS for America Act, will certainly help to boost US efforts to develop local manufacturing capacity and supply chains for critical technologies.

Meanwhile, capital investment in semiconductor FDI projects in western Europe fell to $2.4bn 2021, failing to reach the peak of $9.3bn it recorded in 2019. This figure was largely inflated by Intel's plans to invest $8bn to further expand manufacturing capacity at its facility in Leixlip, Ireland. In an effort to reduce over-dependence on Asia production, the European Commission, the executive arm of the EU, announced a new European Chips Act that will enable €15bn in additional public and private investments until 2030. According to **fDi** Markets' investor signals database, which monitors early indications by companies considering future investment in foreign markets, last year US-based Intel announced plans to build new chip-making facilities in Europe valued at up to $95bn. The company indicated that the expansion is in response to a cross-border race to add manufacturing capacity at a time of a global chip supply crunch. The company stated it would add at least two new facilities in Europe. Fast forward to March 2022 and Intel has announced plans to inject €33bn into boosting chip manufacturing in Europe. As a part of its European investment plan, the company is to set up a new €17bn chip manufacturing site in Magdeburg, Germany. It is due to start operating in 2027.

TSMC is also considering the construction of new factories in Germany. GlobalWafers Co, a manufacturer of silicon wafers and a subsidiary of Taiwan-based Sino-American Silicon Products, is also among the list of companies planning to expand its global production capacity with the addition of new plants in Europe and Asia.

In Asia, China continues to focus efforts on boosting its domestic chip industry with the official goal to domestically produce 70% of chips needed for its own consumption. The Beijing government has made self-sufficiency in semiconductors a priority amid geopolitical tensions with the US, however, China remains heavily reliant on foreign imports for technology. Japan and Malaysia, also recognising semiconductors as an essential industry, recorded close to $15bn and $10bn respectively in foreign investments last year, **fDi** Markets found.

TSMC announced a partnership with Japanese Sony in November last year to set up a $7bn fabrication plant in Kumamoto, Japan. The announcement came just a few weeks after US-based Micron announced plans to build a new Y800bn ($7bn) fab in Hiroshima as part of its global strategy to ramp up its manufacturing and research and development operations in the next decade.

The announcement of these capital intensive projects, while spread out across the globe, will put a major strain on the supply of human capital within the industry. It has long been reported that China and the US are fighting a chronic talent shortage in the semiconductor industry with the issue only set to worsen in the next few years as more fabrication plants are expected to be built.

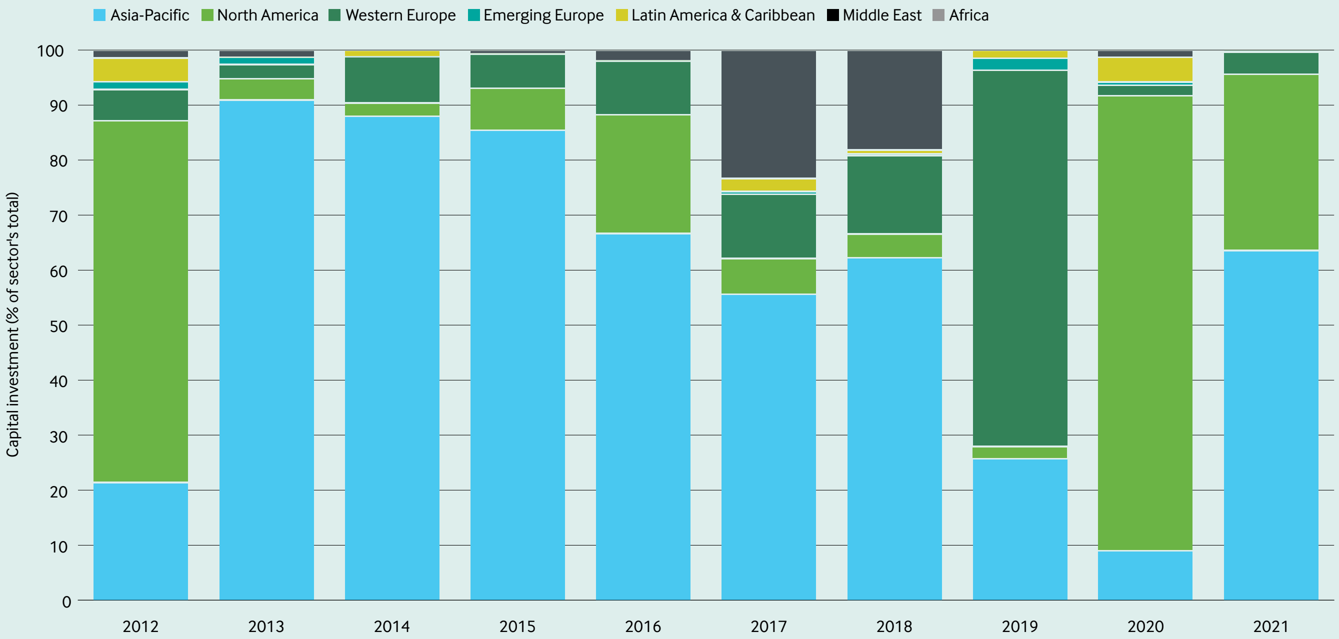
Research from Eightfold AI on the propensity of the US reshoring the semiconductor industry shows that in order for the US to meet its domestic consumption needs, it would require about 18-20 more fabs and about 70,000 to 90,000 more jobs. To meet this, the country would have to increase its current workforce by approximately 50%. Equally, China faces the same problem. A report published last year by the China Institute for Educational Finance Research at Peking University, claims the shortfall of talent in China's semiconductor industry doubled in 2019 to about 300,000 from 150,000 in 2015.

To help reduce the skills shortage, the Taiwanese government and local chip manufacturers, led by TSMC, are investing hundreds of millions in feeder universities. The EU is addressing the shortage by subsidising regional chip makers. The US has passed a bill that includes $5.2bn worth of STEM scholarships, $8.4bn for STEM workforce programmes, and $9.6bn for university technology centres and innovation institutes. This is likely to close the talent gap in the long term, however, short term demands remain high.

The World Semiconductor Trade Statistics organisation forecasts the global semiconductor market will continue to grow by 8.8% in 2022. Moreover, demand for semiconductor production is only projected to rise as we become even more heavily dependent on chips for essential technologies. Yet while the Asia-Pacific region may be ahead of its peers in some areas of chip development, the US and Europe, in particular, are looking to pour funds into the sector to avert shortages of semiconductors in the future and promote chip autarky through investment into the industry.

US AND EUROPE IN PUSH TO CLOSE THE GAP WITH ASIAN COUNTRIES:

PROPORTION OF SEMICONDUCTORS FDI INFLOWS BY REGION



Source: **fDi** Markets Note: Includes estimates

Europe

Key trends in 2021 include:

• The number of FDI projects into Europe increased from 5648 in 2020 to 6259 in 2021, seeing a total increase of 11%. The region also saw a 16% increase in capital investment and a 24% increase in job creation from 2020 to 2021.

• Although Western Europe attracted the lion's share of FDI projects, capital investment, and job creation within the wider region, Emerging Europe experienced higher growth in the number of projects and capital investment in 2021, with increases of 13% and 20% respectively, from the previous year.

• The top three destination countries for FDI in in Europe – Germany, the UK and Spain – welcomed over two-fifths of FDI projects into Europe in 2021, with all three countries seeing project increases. Germany and the UK ranked as the top two recipients of Europe-bound FDI, while Spain attracted 675 investments.

• The UK received a fifth of Europe's capital investment in 2021, garnering $43.4bn - an increase of 15% from 2020. The UK also saw record levels of job creation in 2021, when over 90,000 jobs were announced - an increase of 49% from 2019 levels.

• FDI capital investment into Spain more than doubled from 2020 to 2021. A high proportion of this investment is attributed to several capital-intensive renewable energy ventures, from the likes of Portugal-based Energias de Portugal and Italy-based Enel. Job creation in Spain also increased by 46% in 2021 from 2020.

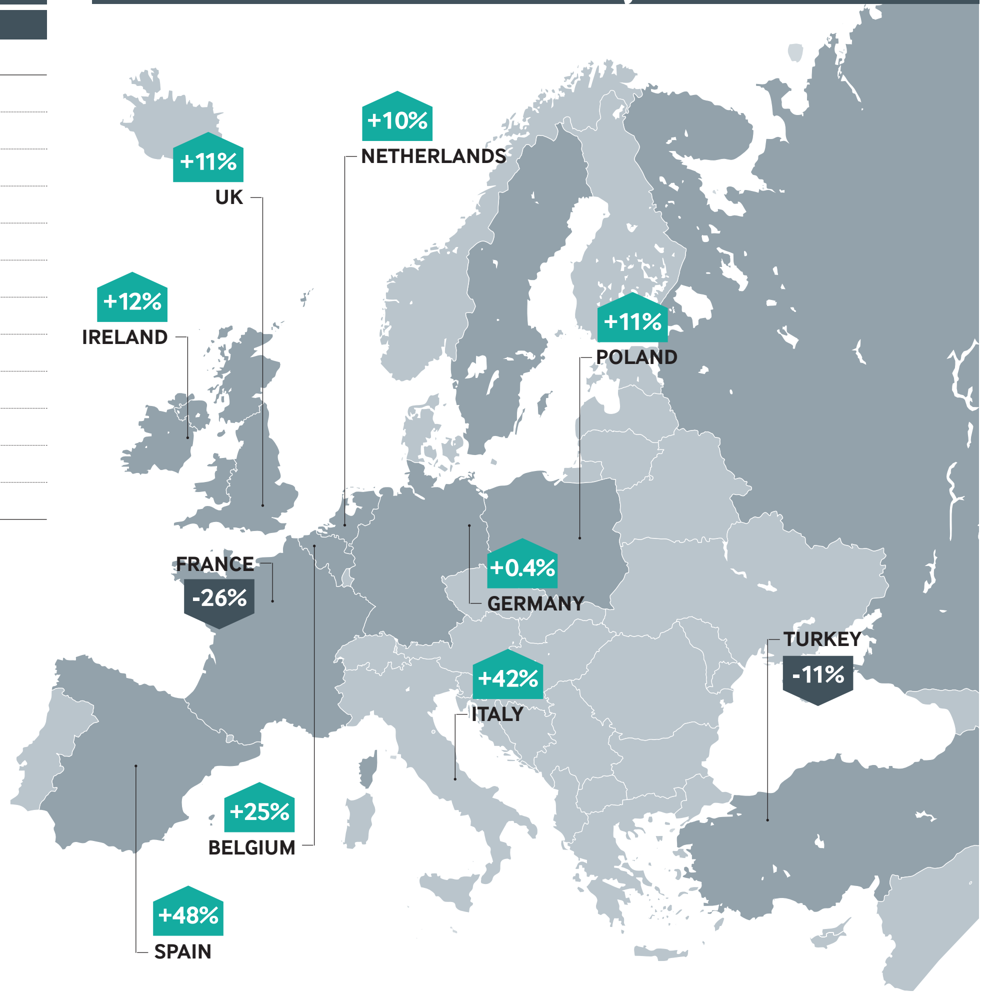
Table 1

FDI INTO EUROPE BY PROJECT NUMBERS 2021

Country	Projects
Germany	982
United Kingdom	981
Spain	675
Poland	423
France	378
Netherlands	282
Ireland	256
Belgium	241
Italy	193
Turkey	183
Other	1665
Total	6259

Source: fDi Markets

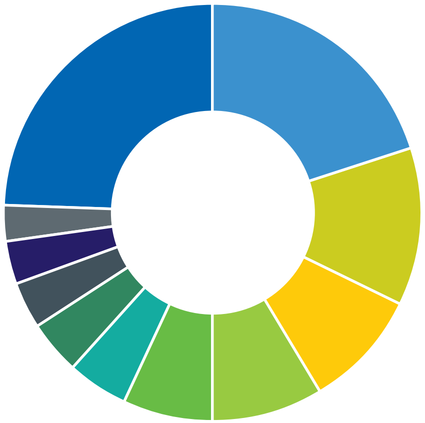
PERCENTAGE CHANGE ON 2020 BY PROJECT NUMBERS



Source: fDi Markets
Note: Percentages rounded up/down

Chart 1

FDI INTO EUROPE BY CAPITAL INVESTMENT 2021



Europe market share %		Capital investment ($bn)
20%	UK	43.4
12%	Spain	26.6
9.1%	Germany	19.6
8.6%	Poland	18.4
6.9%	Russia	14.8
4.9%	France	10.5
3.9%	Ireland	8.3
3.7%	Netherlands	8
3.3%	Belgium	7.1
2.9%	Italy	6.3
24%	Other	52.1

Source: **fDi** Markets
Note: Includes estimates

Table 2

FDI OUT OF EUROPE BY CAPITAL INVESTMENT 2021

Country	Outbound $bn
Germany	43.8
United Kingdom	37.4
France	28.9
Netherlands	16.8
Spain	15.8
Italy	14.3
Switzerland	12.6
Denmark	9.1
Belgium	7.7
Sweden	7.4
Other	47.7
Total	241.5

Source: **fDi** Markets
Note: Includes estimates

Table 3

FDI OUT OF EUROPE BY PROJECT NUMBERS 2021

Country	Outbound projects
United Kingdom	1417
Germany	1125
France	725
Switzerland	538
Netherlands	430
Spain	357
Sweden	292
Italy	288
Denmark	245
Ireland	207
Other	1312
Total	6936

Source: **fDi** Markets

KEY TREND

19%

Poland attracted the highest proportion of foreign-owned jobs in the region in 2021. Since 2019, foreign-owned companies have created over 339,000 jobs in Poland, which on average equates to the largest market share of FDI jobs in the region at 19%.

Recent major projects

- **SK Innovation**, a subsidiary of South Korea-based SK Group, is investing $2.29bn to establish an EV battery plant in Ivancsa, Hungary. The new 700,000 sq m plant will be its largest in Europe and will have an annual production capacity of 30GWh, which will allow the supply of batteries for approximately 430,000 electric cars per year. The investment will create 2500 new jobs and was supported by the Hungarian Investment Promotion Agency.
- **Saudi Basic Industries**, a subsidiary of Saudi Arabia-based Saudi Aramco, has announced plans to invest £850m ($1.2bn) into its chemical plant in Wilton, a village in North Yorkshire, UK.
- **Spain-based Fertiberia** has signed a MoU with a Swedish regional government body to invest $1.14bn in a green ammonia and fertiliser plant in the Lulea-Boden area of Norrbotten region, Sweden. The project, named Green Wolverine, is set to be operational in 2026 and will produce up to 500,000 tonnes of ammonia per year. This will create 500 new jobs.

Renewables FDI and taking decisive steps towards a cleaner environment

Josh Crawford, production manager, **fDi** Markets

The 2021 UN Climate Change Conference, held in Glasgow, provided an important opportunity for the world to be open, honest, and decisive on the environment. With 120 global leaders in attendance, a host of topics were discussed, including deforestation reversal and uses of CleanTech, and several agreements were formalised. Notably, at least 23 countries made new commitments to phase out coal power, including five of the world's top 20 coal-producing nations. Fatih Birol, the International Energy Agency (IEA) executive director, claimed on this last point in May 2021: "If governments are serious about the climate crisis, there can be no new investments in oil, gas and coal, from now – from this year." The IEA also stated that investment in renewable energy must be tripled by 2030.

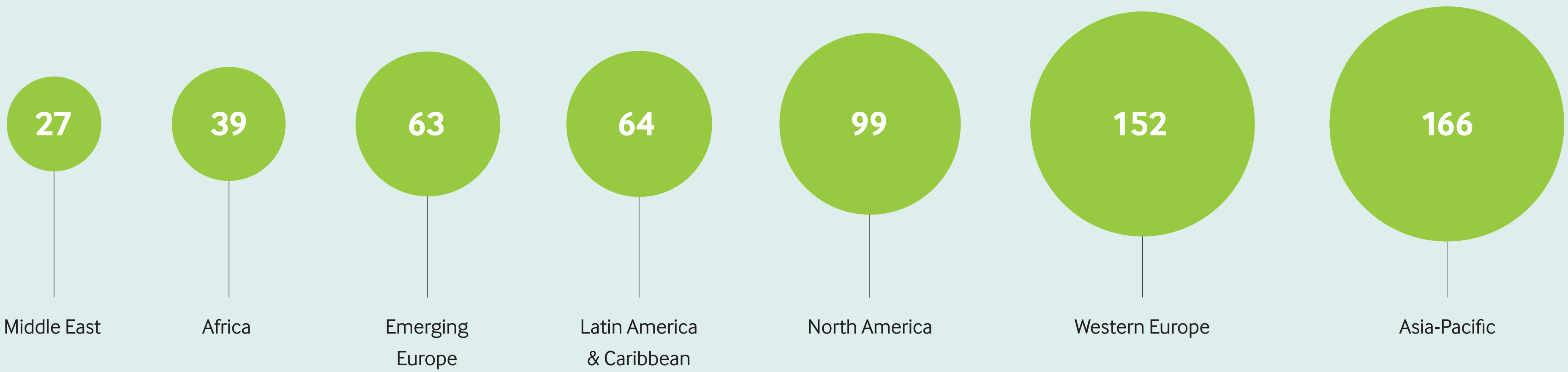
The global foreign direct investment market in 2021 indicates that forward movements are being taken on the environment. According to greenfield investment monitor **fDi** Markets, the renewable energy sector attracted $85.2bn of capital investment, the highest of any sector, and 466 projects. Conversely, projects into the coal, oil, and gas sector have continued to decline, dropping from 192 investment projects in 2019 to 64 in 2021. Despite this global fall, the Latin America and Caribbean region posted project growth, a trend indicative of the area's dependence on coal, oil, and gas. For example, in Guyana, president Irfaan Ali says the oil and gas sector "will bring much needed resources to expand the economy," with the country expected to have the highest per capita oil production globally by 2026.

"The global foreign direct investment market in 2021 indicates that forward movements are being taken on the environment.

The Asia-Pacific region, despite a fall in renewable energy project numbers, attracted an additional 6881 sector-related jobs and $1.6bn of capital investment in 2021, the most capital investment received by any world region. According to Wood Mackenzie, renewable investments in Asia-Pacific may double to $1300bn during the current decade, while fossil fuel investments are expected to fall by 25% during the same period. A note of caution must be sounded, with 47.8% of regional energy consumption originating from coal sources in 2020, highlighting a strong dependency, and one that will be hard to shift in a one-decade time frame.

North America achieved increased flows of capital investment

ASIA-PACIFIC SPEEDS UP GREEN TRANSITION: ANNOUNCED RENEWABLE ENERGY FDI PROJECTS IN 2021 BY REGION



Source: **fDi** Markets

and greater job creation. The landscape in the US will be aided by a new infrastructure bill passed by the US House of Representatives, $73bn of which is being devoted to clean energy.

Africa improved its project intake from 2020, with growth driven by South Africa-bound investments. For example, Mainstream Renewable Power, a subsidiary of Norway-based Aker, announced plans for 12 wind and solar projects, to be implemented throughout the country. Changes in the local regulatory environment will potentially reinforce a long-term renewables trend in South Africa, with both domestic and international forces playing a role. Eskom, the state power utility, has forwarded a $10bn plan to close its coal-fired plants by 2050 and revert to renewable energy sources. A multi-billion-dollar partnership has also been announced between various countries, including the US and UK, to help finance South Africa's transition away from coal, with British Prime Minister Boris Johnson outlining details of the plan at the UN Climate Conference.

Western Europe, when measured by project numbers, was the top region for renewable energy investments in 2021, representing continued growth. From 2016 to 2021, the region has experienced FDI project growth of 216%, with an 8.9% increase from 2020. Spain is at the forefront of the region, with the country planning to have a proposed wind and solar photovoltaic capacity of 120 gigawatts by 2030. A clean energy bill was also approved by Spain's parliament in May 2021, outlining a strategy to be carbon-neutral by 2050 and banning the sale of fossil fuel vehicles by 2040.

A significant number of solar projects were announced by foreign firms in Spain during 2021, with UK-based Esparity Solar Holdings investing $342.4m across nine sites and Norway-based Statkraft developing four photovoltaic parks as part of a combined $216.8m investment. The UK was the leading nation for offshore projects, followed by Poland and the US. FDI activity in offshore renewable energy has been on an upwards curve since 2016, with project growth of 211%.

Spain was also the top country destination in Western Europe for hydrogen-related foreign investment, attracting $4.3bn of capital investment and creating 1591 jobs. Italy-based Endesa was a driver of this foreign inflow of capital, announcing a $2.9bn hydrogen package. Hydrogen will continue to be a feature of the Spanish landscape, with Repsol, a domestic energy firm, leading the Spanish Hydrogen Network (Shyne). This consortium of 33 companies will invest $4.4bn to install 500 megawatts of green hydrogen capacity by 2025 and two gigawatts by 2030. The government has also announced plans to allocate $1.6bn in order to boost the use and production of renewable hydrogen by 2023.

CleanTech innovation will be important for any long-term renewables growth, bringing down the price of technology and lowering the barrier to entry for developing countries. **fDi** Markets tracked 346 CleanTech investments during 2021, a year-on-year project increase of 293%. Western Europe was the main hub for related investments, a region where, according to a PwC survey, CleanTech and renewables is the second biggest growth sector. The UN Climate Conference has also shone a strong light on these technologies, with a cohort of CleanTech ventures presented in Glasgow. Whether it be these CleanTech technologies, investment by foreign firms, or regulatory actions enacted by local and international governments, it appears the world is taking the opportunity to be more decisive on the environment.

North America

Key trends in 2021 include:

• In 2021 the total number of FDI projects into North America rose to 1936, up by 5% from 2020. The region also witnessed a 28% increase in capital investment to $99.5bn and a 16% rise in jobs to over 181,200 in the period.

• The US remained the top destination in the region for projects, capital investment, and job creation. The US achieved a regional market share of 82% for projects and recorded a 32% increase in capital investment in 2021 from the previous year.

• The number of FDI projects into Canada rose to 349 projects in 2021, up by 16% from 2020. Total capital investment also increased by 12% to $17.8bn in the period.

• At the US state level, New York was the top destination for projects, with 192 investments announced. This represents a 29% increase from 2020, with New York overtaking California and Texas. California witnessed an 18% drop in project numbers in the same period, recording 159 investments.

• Texas was the top state for capital investment in 2021, attracting a total of $25.2bn, a 307% increase from 2020 and a market share of 25%. Texas also recorded a 45% increase in job creation in the period, largely attributable to a multi-billion-dollar investment for the production of semiconductor chips by South Korea-based Samsung.

• North Carolina, despite ranking as the tenth destination state for FDI projects, took second place for capital investment in 2021. It attracted $56.1bn in 2021, a 109% increase from 2020. High-value projects included an $18.4bn investment announced by Fujifilm Diosynth Biotechnologies.

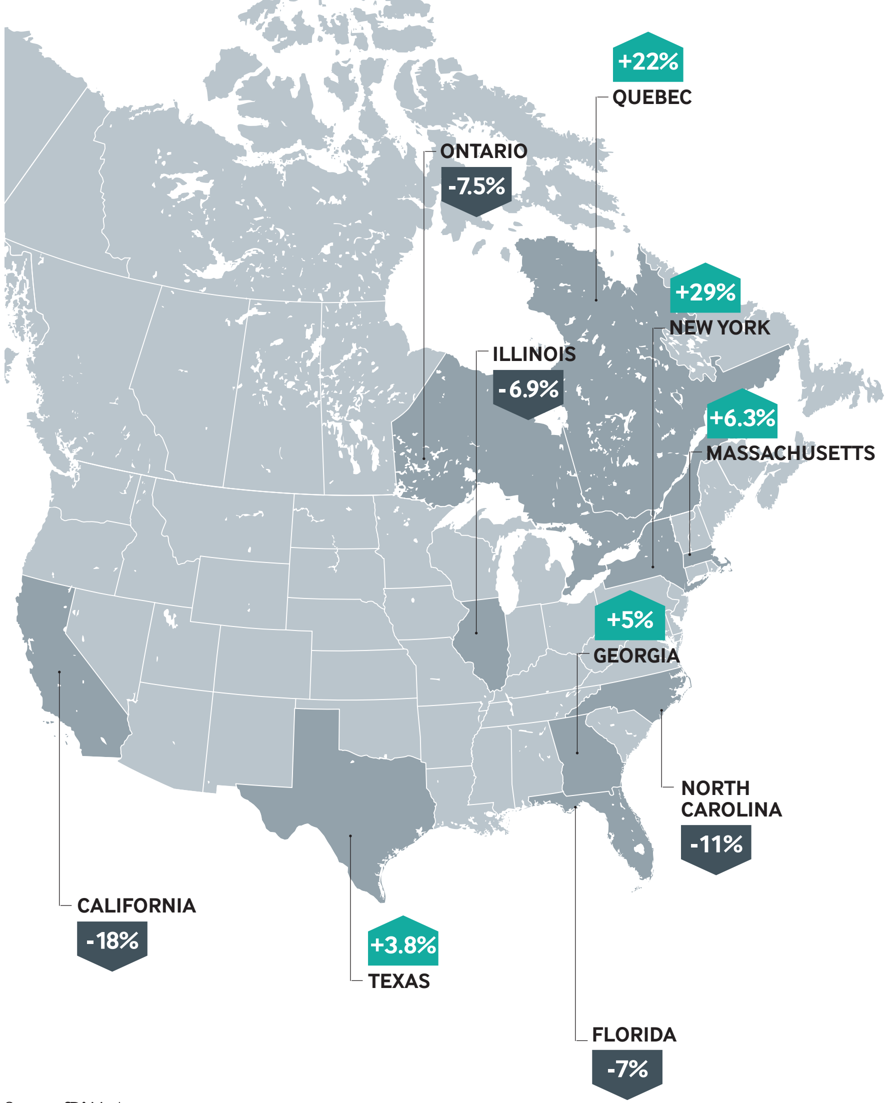
Table 1

FDI INTO NORTH AMERICA BY PROJECT NUMBERS 2021

State/province	Projects
New York	192
Texas	166
California	159
Ontario	136
Florida	106
Quebec	78
Massachusetts	68
Georgia	61
Illinois	54
North Carolina	51
Other	865
Total	1936

Source: **fDi** Markets

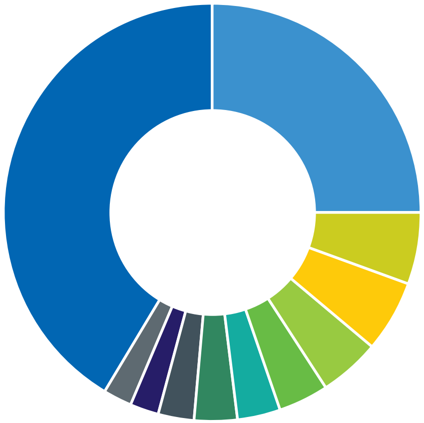
PERCENTAGE CHANGE ON 2020 BY PROJECT NUMBERS



Source: **fDi** Markets
Note: Percentages rounded up/down

Chart 1

FDI INTO NORTH AMERICA BY CAPITAL INVESTMENT 2021



North America market share %		Capital investment ($bn)
25%	Texas	**25.2**
5.6%	North Carolina	**5.6**
5.6%	Ontario	**5.6**
4.6%	Alberta	**4.5**
3.9%	New York	**3.9**
3.6%	California	**3.6**
3.2%	Quebec	**3.2**
2.8%	Georgia	**2.8**
2.4%	Florida	**2.4**
2.2%	Ohio	**2.2**
41.1%	Other	**40.8**

Source: **fDi** Markets
Note: Includes estimates

Table 2

FDI OUT OF NORTH AMERICA BY CAPITAL INVESTMENT 2021

State/province	Outbound $bn
California	45.1
Washington	22.7
New York	15.11
Texas	14.1
Ontario	10.9
Idaho	7.3
Michigan	4.9
Colorado	4.6
British Columbia	4.1
Illinois	3.6
Other	36.1
Total	168.4

Source: **fDi** Markets
Note: Includes estimates

Table 3

FDI OUT OF NORTH AMERICA BY PROJECT NUMBERS 2021

Country	Outbound projects
United Kingdom	353
Germany	176
United States	169
Canada	156
France	137
Japan	110
India	72
Switzerland	70
Australia	62
Italy	62
Other	680
Total	2047

Source: **fDi** Markets

KEY TREND

North America was the source region for $168.4bn of capital investment and 508,300 jobs, both representing a 38% increase on 2020 figures.

Recent major projects

- **Fujifilm Diosynth Biotechnologies,** a subsidiary of Japan-based Fujifilm, is to invest $18.4bn to establish a new cell culture production site in Holly Springs, North Carolina, US. It is expected to be operational by spring 2025 and will create 725 new jobs by the end of 2028.

- **South Korea-based Samsung Group,** is investing $17bn to open a new chip plant in Taylor, Texas, US. The 5 million sq m site is expected to be fully operational in the second half of 2024. It is expected to create more than 2000 new high-tech jobs.

- **AWS,** a subsidiary of US-based Amazon.com, is investing $3.4bn in a new cloud computing server hub in Calgary, Canada. It will create up to 950 direct and indirect jobs and is expected to open in late 2023.

- **Toyota Motor North America,** a subsidiary of Japan-based Toyota Motor, is investing $1.3bn in a joint venture with Toyota Tsusho to build an automotive battery plant in Liberty, North Carolina, US. The plant is expected to start production in 2025 and will create 1750 new jobs.

Alternative proteins: investors cultivate growth with meat replacements

Geraldine Ewing, head, **fDi** Markets

Whether consumers are passing over meat for moral, health or environmental reasons, the increased appetite for alternative protein sources is catching the attention of investors globally.

Consumer interest in finding an alternative to meat is increasing. Research from the Good Food Institute has shown that of those who have tried plant-based alternatives, 80% plan to replace some or all of their meat consumption. As many nations experience sharp increases in living costs and the Food Price Index rises to record highs in February 2022, consumers are re-evaluating their meat-centric diets.

The United Nations Food and Agriculture Organisation projected that global meat consumption would rise by about 1% between 2020 and 2021, with the fastest growth predicted to occur in low- and middle-income countries. Even though high-income nations such as the US still consume more beef per capita than nearly any other nation, consumption is trending on a decline.

The spectrum of alternatives on the market today is growing and extends from cow's milk alternatives, such as oat and pea milks, to futuristic lab-made, 3D printed cultured meats. A range of alternative proteins is also being rolled out for pre-consumer uses such as insect flours in commercial bakeries and research is ongoing to identify whether edible insects could be used in animal feeds as a high-protein sustainable alternative to soy beans.

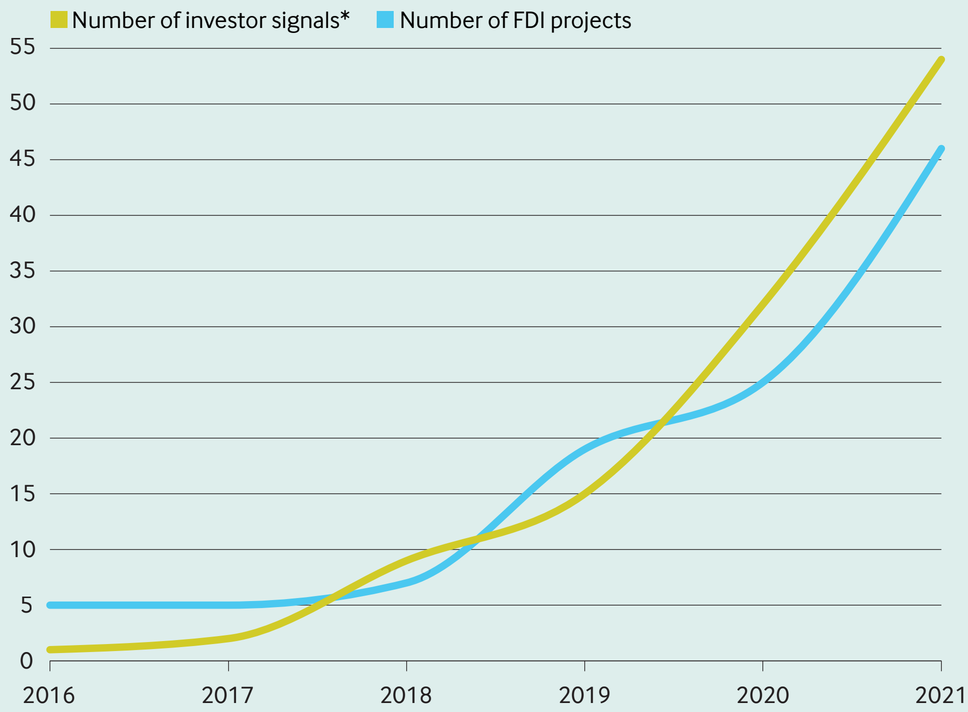
Crossborder investment monitor **fDi** Markets has recorded a year-on-year increase in alternative protein investments since 2017, with growth seen even in 2020, a year when overall FDI declined by over one-third. Chile-based NotCo, Planterra Foods, a plant-based food subsidiary of Brazil-based meat conglomerate JBS, and oat beverage company Oatly were among the most prolific global investors in 2021.

Signals match alternative protein plans

fDi Markets' investor signals database, which monitors early indications by companies considering future investment in foreign markets, has also shown a year-on-year increase in the number of intended investments in alternative proteins. The number of projects increased 84% to 46 in 2021 and the number of Investor Signals grew 69% to 54 in the same year. Outside of the food and beverages sector, the projects and investor signals also cover investments in the biotechnology and chemical sectors.

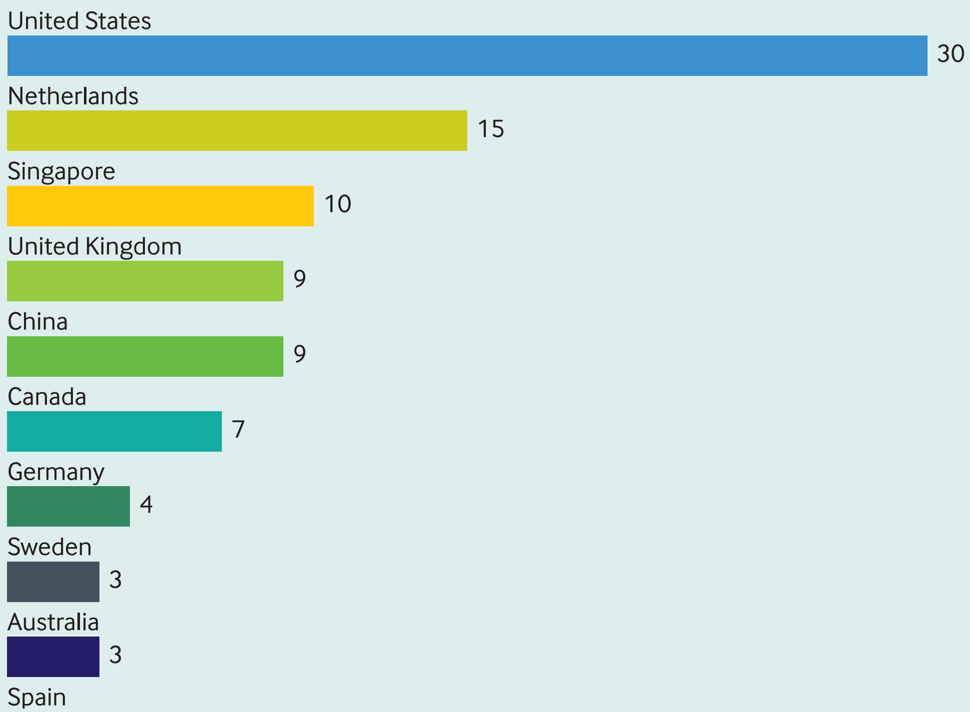
MEAT REPLACEMENT INVESTMENT HEATS UP

FDI PROJECTS AND SIGNALS IN THE ALTERNATIVE PROTEINS SECTOR, 2016-2021



Source: **fDi** Markets
Note: Investor signals represent early investment decisions that have yet to translate into concrete investment projects

US AND THE NETHERLANDS LEAD THE PACK: TOP 10 DESTINATIONS OF ALTERNATIVE PROTEIN FDI PROJECTS, 2016-2021



Source: **fDi** Markets

One of the most capital intensive investments in 2021 was US-based Eat Just's plans for a new $200m commercial facility in Qatar. It will produce cell-based meat, with plans to eventually add capacity to also produce the company's egg alternative product called Just Egg.

Regulators back alternative food push

Two of the top 10 countries for alternative proteins FDI, Singapore and Canada, have already started to direct public funds into cultured meat research and production. Singapore, in particular, has embraced cultured meats, being the first country to award regulatory approval for lab-grown chicken. Canada's Innovation Superclusters Program and the Israeli Innovation Authority are also actively targeting start-ups that will revolutionise the alternative foods landscape.

The Good Food Institute says that commercial cultured meat production, if powered by renewable energy sources, could compete on costs and have a lower environmental footprint compared to conventional meat production by 2030.

Looking ahead, **fDi** Markets is recording FDI projects and investor signals for more novel alternative proteins, including egg alternatives and plant-based seafood. As well as cultured meat, growth may be centred around developing related technologies such as fermentation, plant molecular farming and the implementation of hybrid technologies to reduce the cost of production and increase scale.

Companies such as Sweden-based Mycorena, which develops mycelium-based protein from upcycled food waste and Singapore-based TurtleTree, which uses mammalian cells to make milk in laboratory settings, both raised upwards of $26.8m and $30m respectively for expansion in 2021.

Alternative protein production requires vastly fewer resources than traditional agriculture, and investors will no longer need to locate new facilities in countries that can meet their pasture and water needs, but instead in countries with an innovative cluster and corresponding regulatory environment.

Middle East and Africa

Key trends in 2021 include:

• The number of FDI projects into Africa and the Middle East increased from 1083 in 2020 to 1312 in 2021, a growth of 21%. Regional capital investment rose to $65.5bn and job creation jumped by 23%.

• The Middle East experienced project growth of 45% during 2021, attracting more projects than it did in 2019. Africa, despite a small decline in the number of projects, experienced an increase in the value of announced projects to $38.9bn in 2021, a 24% increase from the previous year.

• The United Arab Emirates (UAE) remained the top destination for projects in the region in 2021. It received 455 investments, accounting for 35% of total projects in the region and 16% of total job creation.

• FDI into Qatar rebounded in 2021, attracting 82 projects in 2021. This represents growth exceeding 200% compared to inbound project numbers in 2019.

• Israel attracted a fraction more FDI projects in 2021 (77) than in 2019 (76). A total of $2.6bn was invested in the country in 2021, an increase of 84% from $1.4bn in 2020, showing post-pandemic recovery.

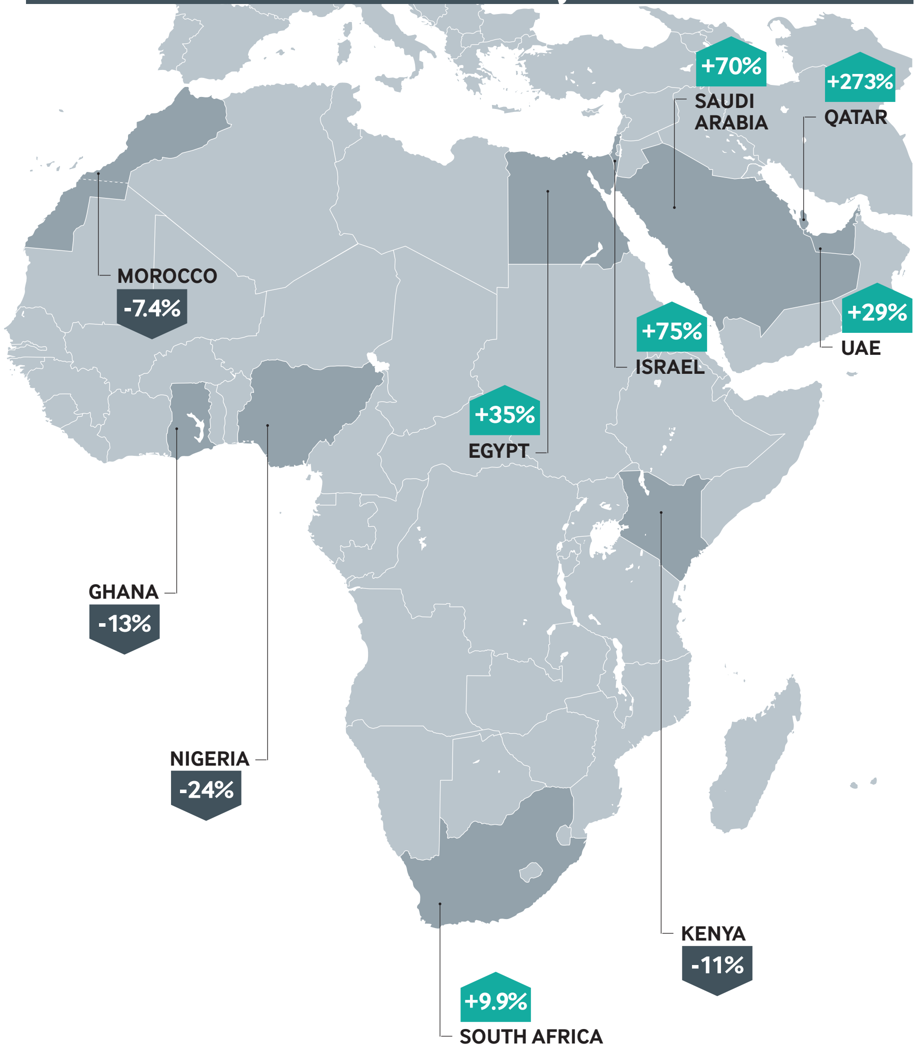
Table 1

FDI INTO MIDDLE EAST AND AFRICA BY PROJECT NUMBERS 2021

Country	Projects
UAE	455
Saudi Arabia	126
South Africa	111
Qatar	82
Israel	77
Egypt	58
Morocco	50
Nigeria	41
Kenya	32
Ghana	27
Other	253
Total	1312

Source: **fDi** Markets

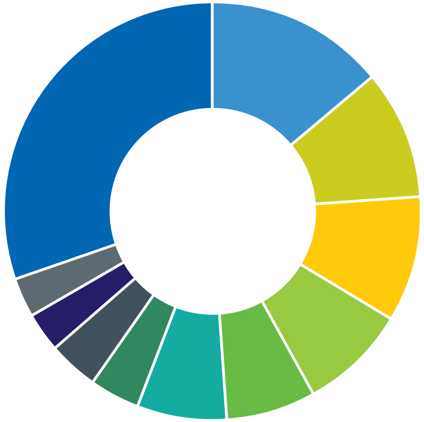
PERCENTAGE CHANGE ON 2020 BY PROJECT NUMBERS



Source: **fDi** Markets
Note: Percentages rounded up/down

Chart 1

FDI INTO MIDDLE EAST AND AFRICA BY CAPITAL INVESTMENT 2021



Middle East and Africa market share %		Capital investment ($bn)
14%	Saudi Arabia	9.3
10%	UAE	6.6
9.8%	South Africa	6.4
8.2%	Egypt	5.4
7.0%	Namibia	4.6
6.9%	Oman	4.5
4%	Israel	2.6
3.7%	Mozambique	2.5
3.2%	Gabon	2.1
3.1%	Kenya	2
30%	Other	19.6

Source: **fDi** Markets
Note: Includes estimates

Table 2

FDI OUT OF MIDDLE EAST AND AFRICA BY CAPITAL INVESTMENT 2021

Country	Outbound $bn
UAE	15.3
Israel	3
South Africa	2.9
Kuwait	2.1
Saudi Arabia	1.7
Mauritius	1.5
Morocco	1.5
Kenya	0.6
Nigeria	0.6
Lebanon	0.5
Other	1.6
Total	31.2

Source: **fDi** Markets
Note: Includes estimates

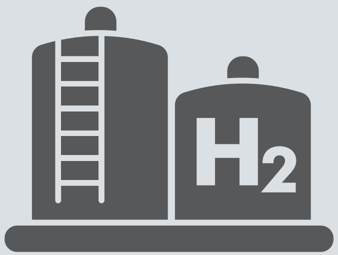
Table 3

FDI OUT OF MIDDLE EAST AND AFRICA BY PROJECT NUMBERS 2021

Country	Outbound projects
UAE	174
Israel	143
South Africa	68
Lebanon	26
Nigeria	25
Saudi Arabia	20
Kuwait	18
Egypt	16
Qatar	12
Morocco	10
Other	59
Total	571

Source: **fDi** Markets

KEY TREND



Namibia saw inbound capital investment increase by over 3000%, to $4.6bn in 2021. This increase is primarily driven by the announcement of a $4.4bn utility-scale green hydrogen project in the Tsau Khaeb national park.

Recent major projects

- **Hyphen Hydrogen Energy,** ultimately headquartered in Germany, is planning to develop a $4.4bn utility-scale green hydrogen project in the Tsau Khaeb national park, Namibia. The first phase, which is expected to enter production in 2026, will serve regional and global markets and create 3000 permanent jobs.
- **India-based ACME Group** is to invest $3.5bn to establish a green ammonia project at the Duqm Special Economic Zone in Oman. The large-scale facility will produce green hydrogen and green ammonia to export to demanding markets, such as Europe and Asia, by the end of 2022.
- **UK-based Globeleq Generation** is to develop a $2bn gas-fired power plant in Inhambane Province, Mozambique. The Central Termica de Temane power project (CTT) consists of a 450MW gas-fired power plant, which will supply power to EDM when it comes online in 2024. The project is a joint venture with Electricidade de Moçambique, E.P. (EDM) and Sasol.

Venture capital-fuelled global investment slows

Alex Irwin-Hunt, global markets editor, **fDi** Intelligence

An almost two decade boom of physical cross-border expansion by venture-backed companies has slowed since the onset of the pandemic.

In 2019, a record 1654 greenfield FDI projects were announced by private businesses with venture capital (VC) funding worldwide, according to **fDi** research combining data from **fDi** Markets and Crunchbase. This was more than ten times as many VC-backed foreign investment projects (VC-FDI) compared with a decade earlier.

However, VC-FDI projects declined by almost a third in 2020, as scale-ups redefined their international expansion strategies. Venture capital (VC) is a form of equity-based financing typically given to entrepreneurs and early-stage companies deemed to be innovative with high growth potential.

Physical cross-border expansion undertaken by VC-backed firms is often a fundamental way to acquire and serve new customers. Other aims of VC-FDI include hiring top talent, taking part in different innovation ecosystems and building a local presence in regional markets.

But the normalisation of remote working and globally distributed teams, particularly in the technology sector, has embedded the downward trend. FDI projects announced by VC-backed firms in 2021 decreased by a further 13.6%. This was contrary to the 11% increase in the total number of global FDI projects.

Booming funding

While 2020 and 2021 saw declining VC-FDI, they were an aberration from a sixteen-year growing trend. Almost 10,000 VC-FDI projects have been tracked since 2003, with more than two-thirds in the broadly defined tech industry, according to **fDi** research.

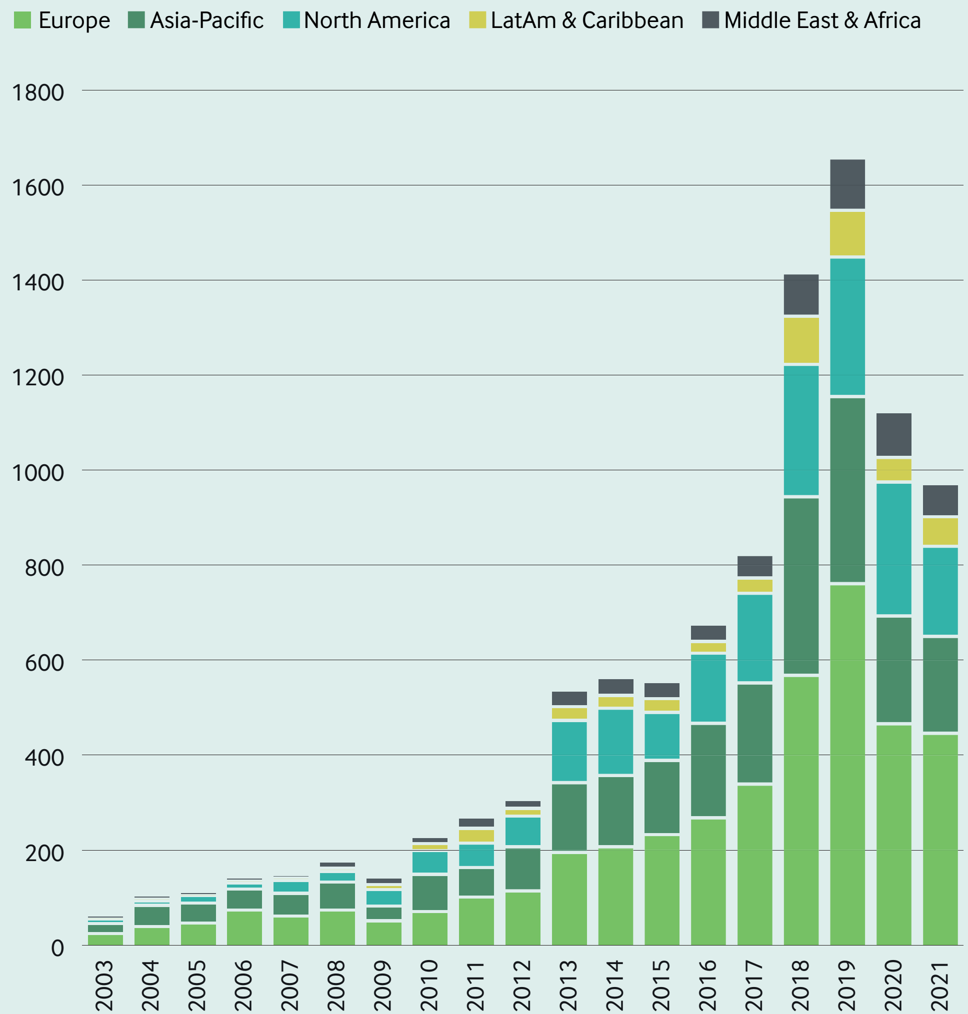
The rise of VC-FDI has coincided with more capital being allocated to VC funds by institutional investors, soaring funding rounds and larger numbers of start-ups valued above $1bn – commonly known as unicorns.

In fact, global VC investment in 2021 broke all records. More than $687bn of VC funding was raised by start-ups globally, up from $353.3bn in 2020, according to figures from PitchBook.

Private venture-backed companies in the US alone, which is the birthplace of the modern VC industry, raised a total of $330bn, according to PitchBook. But the US's global share of funding has declined over time from more than 80% before the global financial crisis to around half in 2021.

VENTURE-BACKED INTERNATIONAL EXPANSION HAS SLOWED SINCE COVID-19

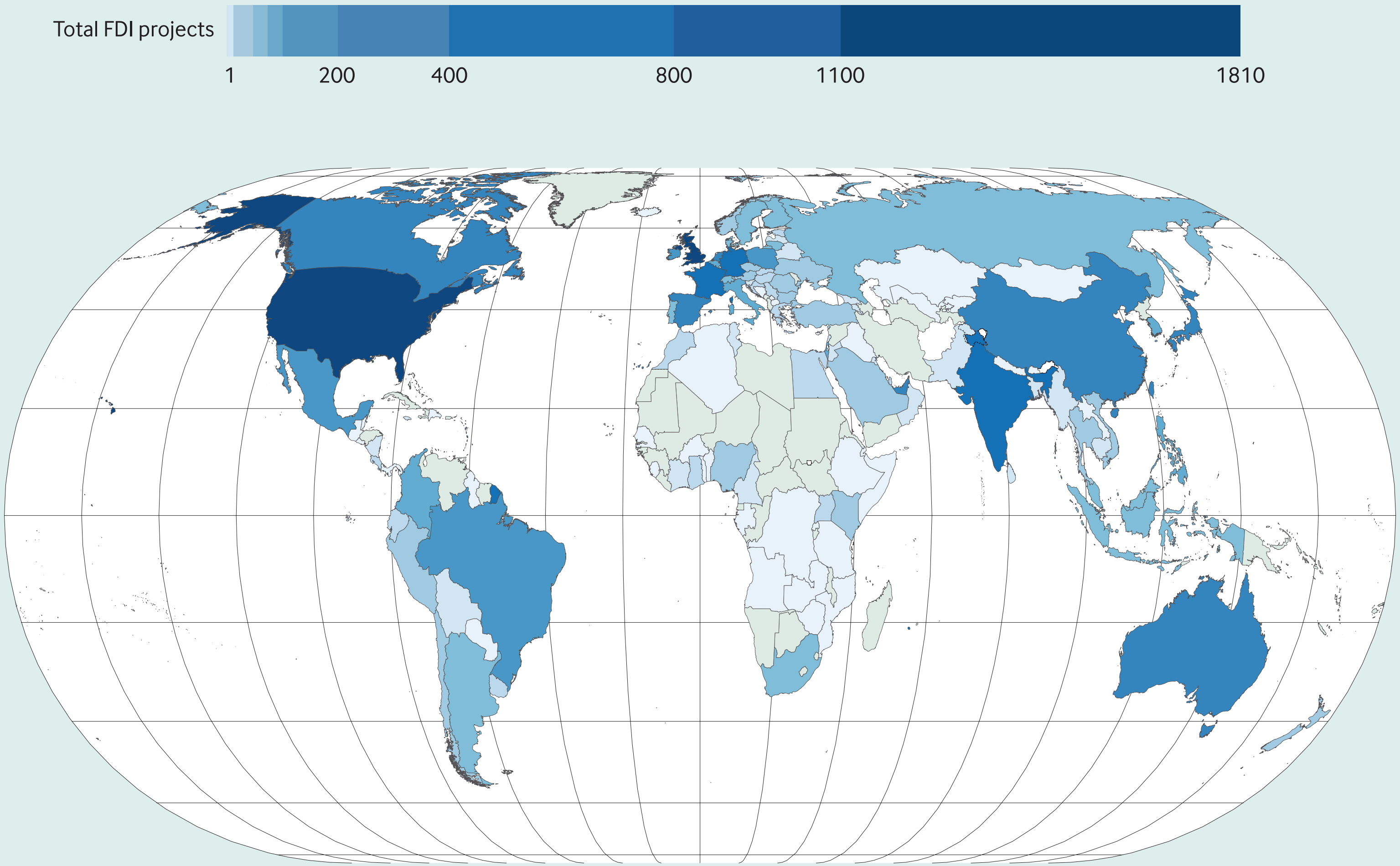
GLOBAL FDI PROJECTS ANNOUNCED BY COMPANIES WITH VC FUNDING, 2003-2021



Source: Crunchbase, **fDi** Markets

WHERE HAVE VENTURE-BACKED COMPANIES BEEN INVESTING

FOREIGN DIRECT INVESTMENT (FDI) PROJECTS BY DESTINATION COUNTRY, 2003-2021



Source: **fDi** Markets

Leading locations

Even with the US taking a smaller slice of the global VC pie, it is still home to the most venture-backed start-ups making cross-border investments. US-headquartered companies announced 30.4% of the almost 10,000 VC-FDI projects tracked since 2003.

More than 50% of the US-sourced projects were made by start-ups in the tech hubs of New York and the Bay Area, which includes San Francisco and Silicon Valley. The US was also the most sought after market to invest into by foreign venture-backed firms. A total 1810 VC-FDI projects worth an estimated $26.6bn were tracked in the US in the 19-year period.

Meanwhile, the UK attracted the second-highest number of both inbound and outbound VC-FDI projects. London drove much of this activity. Over the 19-year study period, more than 800 VC-FDI investments flowed both into and out of the UK capital, which is also home to Europe's most developed venture ecosystem.

Elsewhere in Europe, other capital cities with renowned tech hubs attracted a significant number of VC-FDI projects, including Paris (323), Berlin (202), Amsterdam (168), Dublin (121) and Madrid (114).

Singapore magnetised the largest number of projects (409) in the Asia-Pacific region, followed by Tokyo (213), Hong Kong (184) and Sydney (180). Meanwhile in China, Shanghai was the only city to attract more than 100 projects and make it into the top 20 destinations.

In the Middle East, Dubai was by far the favoured destination, attracting 177 VC-FDI projects over the period. While Tel Aviv trailed Dubai as a destination, the Israeli tech hub was a prominent source of projects.

Latin America and the Caribbean

Key trends in 2021 include:

• FDI into Latin America and the Caribbean increased by 13% in 2021 from 982 projects in 2020 to 1111 projects announced in 2021. Capital investment and jobs created also rose by 15% and 18%, respectively, in the period. Outward FDI in the region rose by 8% to a total of 312 projects in 2021 from 2020.

• In terms of FDI projects, Mexico remained the top regional destination in 2021, with 340 investments announced. Project levels rose by 23% in 2021 from 2020, representing 31% of inbound-FDI in Latin America and the Caribbean.

• Brazil was the top nation for capital investment, attracting $23.2bn in 2021. This is heavily influenced by two mega investments, with Enegix Energy announcing a $5.4bn hydrogen plant and Bravo Motor Company developing a $4.4bn electric vehicle facility.

• Costa Rica ranked third in the region in 2021 when measured by project numbers, experiencing a 43% increase on its 2020 performance. Capital investment in the country also increased by 4% to $1.8bn in the period, and was nearly $600m higher than its 2019 figure.

• In 2021, Colombia and Peru both experienced a rebound in FDI projects, rising by 29% and 23%, respectively, from 2020. Both countries also experienced a growth in capital investment and the number of jobs created.

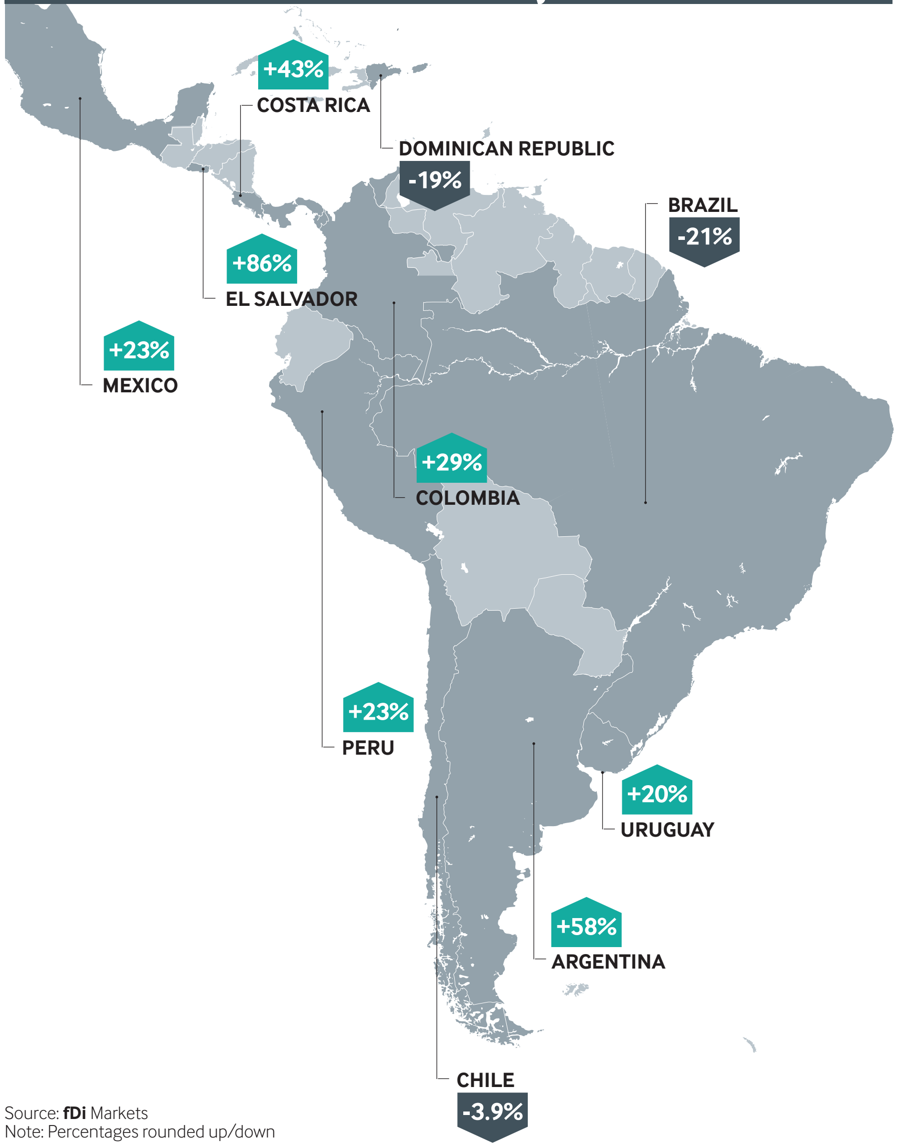
Table 1

FDI INTO LATIN AMERICA AND THE CARIBBEAN BY PROJECT NUMBERS 2021

Country	Projects
Mexico	340
Brazil	172
Costa Rica	139
Colombia	126
Argentina	93
Chile	73
Peru	43
Uruguay	18
Dominican Republic	13
El Salvador	13
Other	81
Total	1111

Source: **fDi** Markets

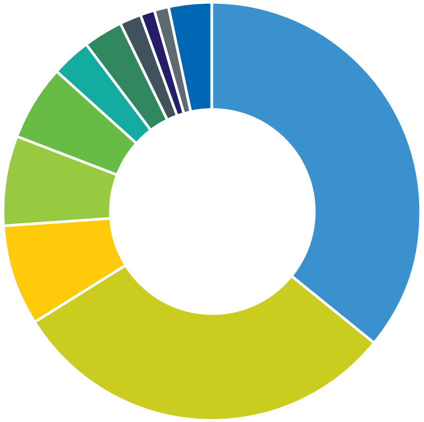
PERCENTAGE CHANGE ON 2020 BY PROJECT NUMBERS



Source: **fDi** Markets
Note: Percentages rounded up/down

Chart 1

FDI INTO LATIN AMERICA AND THE CARIBBEAN BY CAPITAL INVESTMENT 2021



Latin America and the Caribbean market share %		Capital investment ($bn)
36%	Brazil	23.2
30%	Mexico	19.1
8%	Chile	5.1
6.7%	Colombia	4.3
5.8%	Argentina	3.7
3.3%	Peru	2.1
2.8%	Costa Rica	1.8
1.7%	Uruguay	1.1
1.2%	Dominican Republic	0.8
1%	Ecuador	0.7
3.3%	Other	2.1

Source: **fDi** Markets
Note: Includes estimates

Table 2

FDI OUT OF LATIN AMERICA AND THE CARIBBEAN BY CAPITAL INVESTMENT 2021

Country	Outbound $bn
Brazil	2.8
Mexico	2.2
Chile	1
Colombia	0.7
Argentina	0.6
Jamaica	0.4
Panama	0.4
Peru	0.3
Uruguay	0.3
Bermuda	0.2
Other	0.3
Total	9.3

Source: **fDi** Markets
Note: Includes estimates

Table 3

FDI OUT OF LATIN AMERICA AND THE CARIBBEAN BY PROJECT NUMBERS 2021

Country	Outbound projects
Brazil	75
Mexico	68
Argentina	48
Chile	31
Colombia	28
Peru	12
Bermuda	12
Panama	7
Jamaica	7
Cayman Islands	5
Other	19
Total	312

Source: **fDi** Markets

KEY TREND

Argentina experienced a 210% increase in jobs created in 2021, thus reaching an all-time high of over 31,400. The increase can be attributed in large part to Luxembourg-based Globant creating 15,000 local jobs.

Recent major projects

- **Australia-based Enegix Energy** is investing $5.4bn to construct a hydrogen plant in Pecem, Brazil. The 10GW facility will produce enough green hydrogen to power the homes of over 200 million people in developing economies when fully operational in 2024.
- **US-based Bravo Motor Company,** an autonomous and electric vehicle manufacturer, has announced it will establish a $4.4bn manufacturing facility in Belo Horizonte, Brazil, creating 13,813 direct and indirect jobs by 2029.
- **US-based General Motors** is to invest $1bn to expand operations at its production facility in Ramos Arizpe, Mexico. The expansion will add electric vehicle, battery pack and electric motor manufacturing capabilities to the facility.
- **South Africa-based Gold Fields** has commenced construction of its Salares Norte gold project in Diego de Almagro, Chile. The company will invest $860m in the project, which is scheduled to commence production in early 2023. It will create 900 jobs once operational.

Top foreign investors in 2021

US-based online retail company Amazon ranked as the most active investor in terms of total number of projects announced in 2021. The company recorded a total of 170 FDI projects, an increase of 25% on the previous year. Logistics, distribution and transportation operations accounted for more than two-thirds of projects, while 9% focused on electricity infrastructure. This latter figure represents the focus being placed on renewable energy ventures, including wind and solar, in order for Amazon to power its own data centres and fulfilment centres. Western Europe was the main destination market for the firm, where 93 projects were announced, followed by Asia-Pacific and North America, both with 19. The company was also the largest contributor of capital investment and job creation in 2021.

Of the most active investing companies, three of the top 10 companies operate in the software and IT services sector, including US-based Alphabet, Luxembourg-based digital transformation provider Globant, and Canada-based IT services provider CGI Group. Each company announced nearly 30 projects each, with Globant focused on Latin America and Caribbean and CGI Group focused in Western Europe.

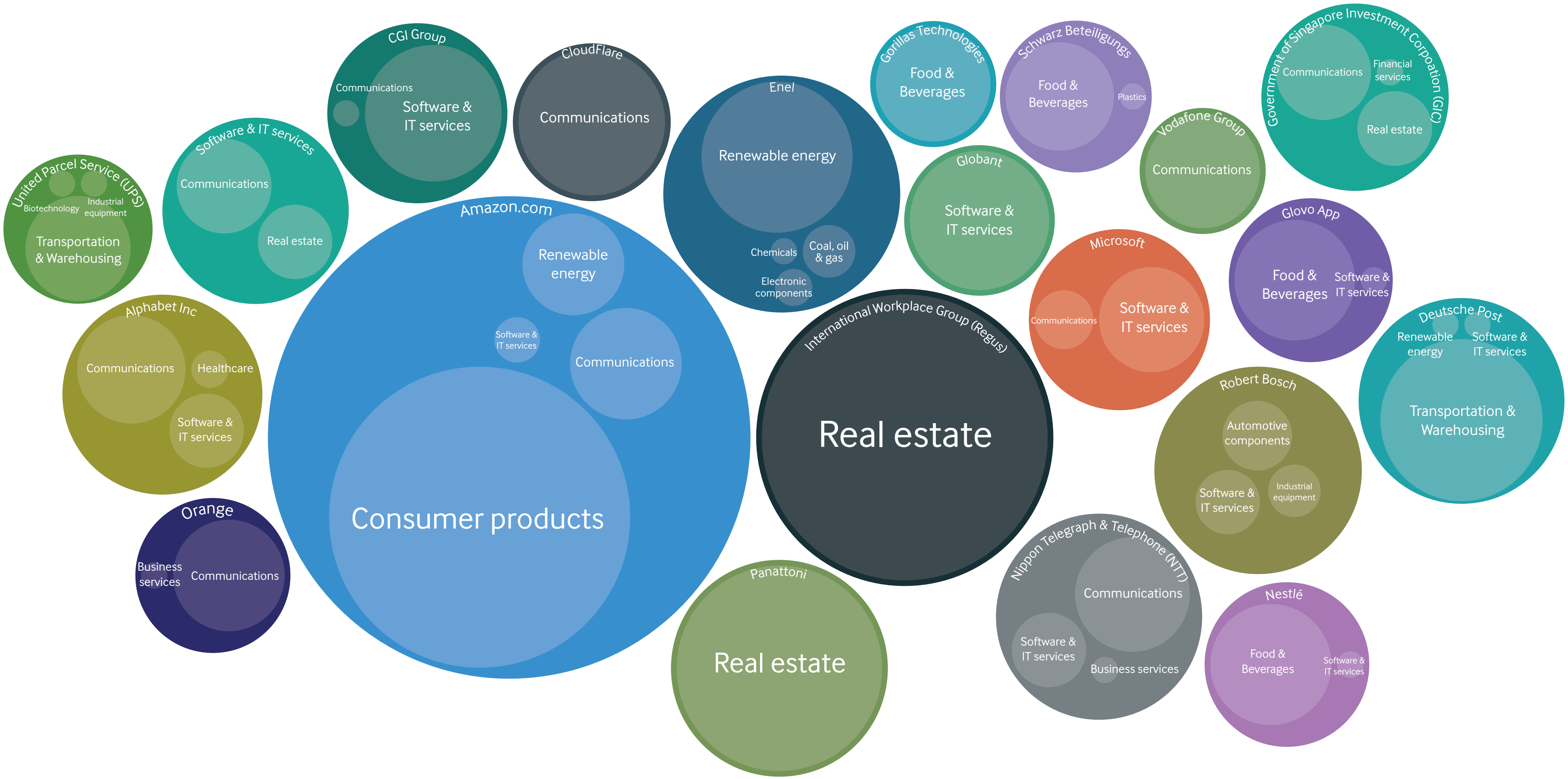
Switzerland-based office provider International Workplace Group (IWG) was the second most active investor in 2021, losing its top spot from the previous year. IWG announced 118 projects in 2021, with 40% concentrated in Western Europe. Fellow real estate company, US-based industrial real estate developer Panattoni, ranked as the third most active investor in 2021, up from fourth in 2020 with a 50% increase on the previous year.

Projects in the communications sector were dominated by US-based website and security services provider Cloudflare, one of the top ten investors in 2021. The company recorded 31 FDI projects in the year, mainly in data centres as part of the company's wider global expansion strategy. Regionally, Asia-Pacific accounted for the most projects (18), followed by Africa (5).

In terms of capital investment, four of the top 10 companies operate in the semiconductor sector. Samsung Group, Taiwan Semiconductor Manufacturing, Intel and Micron Technology invested a total of $44.6bn in 2021, with $17bn of this total investment allocated by the Samsung Group for the construction of a chip plant in Texas, US.

Seven of the top 20 investing companies operate in the renewable energy sector. Capital investment from Risen Energy, Mubadala Investment Company, Enel, Enegix Energy, Enertrag, Energias de Portugal and Electricite de France totalled $41.6bn in 2021 and equated to 7% of all global capital investment.

TOP 20 MOST ACTIVE FOREIGN INVESTORS WITH ANNOUNCED PROJECTS IN 2021



Source: **fDi** Markets

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About fDi Intelligence

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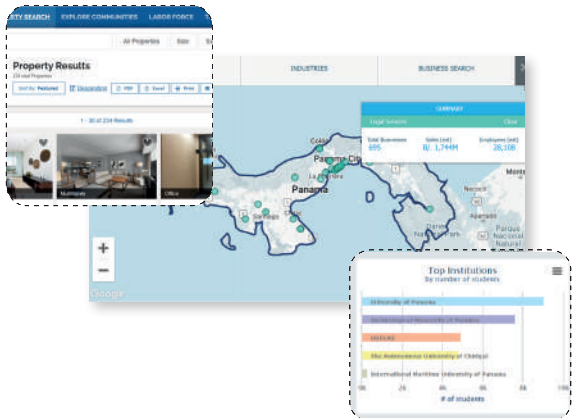

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