

Issue Brief

Financing “The New Oil”

Assessing AI Investment in Israel and the Broader Middle East

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Executive Summary

Aligned with worldwide research, development, commercialization, and advancements in artificial intelligence (AI), the pace of investment in Israel's AI market has become an integral part of the country's economy. From a U.S. national security perspective, investments from strategic competitors such as China into a market with heavy U.S. investments could put some of these emerging technologies at risk, as China's technology strategy of acquiring intellectual capital through partnerships, technology transfer, and acquisitions of foreign companies remains active. This report uses investment data from Crunchbase from the years 2010 to 2021 to assess trends in AI markets in Israel and the broader Middle East. Though the potential risks linked to Chinese technology investments are very much still present in Israel, our analysis reveals a decreasing presence of Chinese investments in Israeli AI markets over the last few years.

The primary findings of this report include:

- Israel has by far the largest AI ecosystem in the Middle East as measured in AI companies and financial investments, and foreign investors play a critical role in Israel's AI market growth.
- Investors from the United States are the most significant players in Israeli AI companies, present on 30 percent of analyzed transactions and comprising 61 percent of disclosed investment capital.
- Investments into Israel's AI companies also came from United States' allies including countries in the European Union and the United Kingdom. Foreign investments from these nations appear to be continuing their trajectory of incremental growth and show no indications of slowing.
- Chinese investors have played a limited role in funding Israel's dynamic AI companies. Chinese AI-related investment activity within Israel is trailing far behind investments from the United States and its allies, in both the number of transactions and disclosed investment values, and has been trending downward since 2019.
- The top Chinese investments in Israeli AI tend to take place in companies that are attracting a large set of multinational investors, rather than a sole foreign investment entity.

- Of the top 10 Israeli companies that have attracted major Chinese investments, six focus on autonomous vehicles, synthetic vision, robotics, or edge computing, raising concerns about technology that could likely transfer well into national security or defense-related applications.

The United States and Israel have a robust history of economic, diplomatic, and strategic ties that have yielded successful partnerships in a variety of contexts. Both countries have agreed artificial intelligence should be a pillar of their future strategic partnership and have outlined some initial steps. Although our findings suggest that China is currently not a major investor in Israel's AI ecosystem, concerns about technology transfer, intellectual property theft, and acquisitions remain top of mind, suggesting that future steps for strategic partnership in AI between the United States and Israel will need to address potential risks from China.

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Introduction

Often self-described as the “Start-Up Nation” by Israeli press and leadership, Israel has consistently outperformed its neighbors in its capacity to field high-tech companies, especially with start-up capital.¹ While Israel’s economy slants towards the technology sector, with 15 percent of its GDP coming from technology industries, it is clear that it also has outsized leads in emerging technologies.² When evaluating recent standings in artificial intelligence, for example, Israel enjoys global ranks of fifth in value of AI investments and sixth in number of AI companies, despite having just over 9.6 million people.³

While AI plays an outsized role in the Israeli economy, there is little research detailing what capital undergirds these investments. Given the close strategic, economic, and diplomatic ties between the United States and Israel, it is perhaps not surprising that an integral portion of the funding for Israeli technology comes from investors in the United States. That said, investors from other nations from East Asia and Europe have also taken advantage of Israel’s dynamic workforce, innovative culture, and pro-growth business policies in recent decades.

Any look at Israel’s AI economy will also benefit from an analysis of its neighbors in the Middle East and AI markets in the region. Which other countries in the Middle East are making gains in AI? How does Israel compare to other AI markets in the Middle East? What is the state of current foreign investments into its technology companies, and what other nations or economic blocs (e.g., China, the United Kingdom, countries from the European Union) have investors in these sectors? The first portion of the report sheds light on these questions by evaluating Israel’s AI investment landscape and comparing it to its neighbors in the Middle East, as well as providing an overview of foreign AI-related investments into Israel.

While Israel has historically received large investments from companies in the United States and the EU, China has also increased its investments there in the last few decades.⁴ This increase of investments has been accompanied, or perhaps preceded by, an overall shift in Chinese overseas investment strategy, from industries including energy and manufacturing to information and technology sectors such as robotics and AI, starting in the early 2000s.⁵ More recently, in 2017, China’s State Council published *A New Generation Artificial Intelligence Development Plan*, which encourages “domestic AI enterprises to ‘go out,’ and provide conveniences and services to powerful

AI enterprises conducting foreign mergers or acquisitions, share investment, start-up investment, establishing foreign research centres, etc.”⁶

Some within China have also recommended that China seek to make “international cooperation the long-term strategy.” One recommendation, specifically related to the semiconductor industry, was to cooperate with Israel and other nations as key targets for future mergers and acquisitions, in order that China may “acquire vast amounts of tacit knowledge on chip technology” and “consolidate the knowledge base for China’s chip R&D.”⁷ Israel plays a major role (33 percent of market share) in wafer-level packaging inspection tools for advanced semiconductors, and a minor role (1 percent of market share) in electronic design automation software for these advanced computer chips.⁸

According to the Institute for National Security Studies in Tel Aviv, in the past two decades 97 percent of deals between China and Israel have been in the technology sector.⁹ With Israel’s reputation for being a fertile environment for start-up technology, China sees Israel as especially attractive for investments, and they view “Israel as a model for quickly creating an innovation hub, which matches well with China’s goal of developing its own indigenous innovation capabilities.”¹⁰ In contrast to other advanced economies, which can also be more highly regulated, China has fewer barriers to investing in Israel.¹¹ More broadly, China’s economic interests in the Middle East—which sits at the center of the Belt and Road Initiative (BRI) and is also home to approximately 500,000 Chinese citizens living and working abroad—are likely to increase.¹²

From a U.S. national security perspective, investments from strategic competitors such as China into a market with heavy U.S. investments could put some of these emerging technologies at risk through various means. Chinese policies are “clear in their intentions and instructions to take intellectual capital from foreign firms—through partnership, direct transfer, and acquisition—with the goal of displacing these firms over time as Chinese companies absorb and adapt this transferred knowhow.”¹³

While other reports have thus far evaluated Chinese investments in Israel’s infrastructure, technology, and economy generally, none have taken an in-depth look at their investments into the artificial intelligence market specifically. What artificial intelligence technologies and companies are Chinese investors investing in? Do these companies have any national security implications for American technology or investments being incubated in Israel? And which way are Chinese investments

trending? The second portion of this report explores these questions relating to how China and the United States interact with Israel’s AI and emerging technology markets.

The United States and Israel have a long history of economic, diplomatic, and strategic ties, which have yielded successful partnerships in a variety of areas. In September 2022, the United States and Israel committed to “strategic high-level dialogue” centered around technology. One sub-area that both countries have agreed should be a pillar of this strategic partnership is the field of artificial intelligence.¹⁴ The report also considers what policies the United States should pursue with Israel to strengthen ties and promote greater security and prosperity. This includes recommendations on a path forward for the United States to best approach Israel’s unique markets, as well as identifying risks posed by the strategic competitors of the United States. Lastly, this report briefly considers whether a United States-led technology partnership could be possible in the Middle East soon, and if so, what that might look like.

Artificial Intelligence Investments in the Middle East

Methodology and Scope

This assessment of financial AI activities in Israel and the broader Middle East is accomplished by evaluating equity investment into AI companies. These investments involve a transfer of equity, which can include venture capital (VC) funding rounds, private equity transactions, and mergers and acquisitions. This is a useful approach for evaluation because more control can be exercised over companies’ operations from equity investors, and therefore that information can be especially relevant for policymakers who are attempting to evaluate who may be in a position of influence within private AI companies.¹⁵

In line with previous CSET research, companies are considered “AI companies” in this analysis if they meet one of two criteria. The first condition includes companies whose products and services depend on artificial intelligence as a part of their core value proposition. The second condition includes companies creating hardware that either implements or develops artificial intelligence. So, while companies that satisfy the first condition may be applying AI to solve problems for a specific industry or need, companies fulfilling the second condition might include designers or manufacturers of high-tech chips.¹⁶

Instead of attempting to draw conclusions from specific individual investments in Israel or the broader Middle East, this analysis has endeavored to measure the strengths of AI markets using an extensive financial dataset called Crunchbase. The reader should keep in mind that a few notable limitations exist to this approach.

First, while the scope of Crunchbase is global (in that it captures transactions and private companies internationally), it is also limited in that it cannot promise to contain all financial transactions worldwide. Secondly, though the dataset does categorize companies—artificial intelligence, machine learning, etc.—some of this data is self-reported, and therefore there is potential for the data to underreport the true number of AI companies in any given nation. CSET supplements the keyword-based AI company identification method with Crunchbase’s AI tag to attempt to ensure as accurate a query as possible. Third, companies can attract funding from more than one investor, representing different countries, and these are not mutually exclusive in our analysis. So a funding round by an Israeli company can attract both an American and a Chinese investor and will show up in analysis for both the United States and China despite the investment being only one transaction. Relatedly, because the total for each transaction is the total disclosed (reported) value, there is no way to know how much capital was raised from each investor. In the previous example, then, there would be no way to know how much capital was attributed to the American investor; only the total funding raised for that round.¹⁷

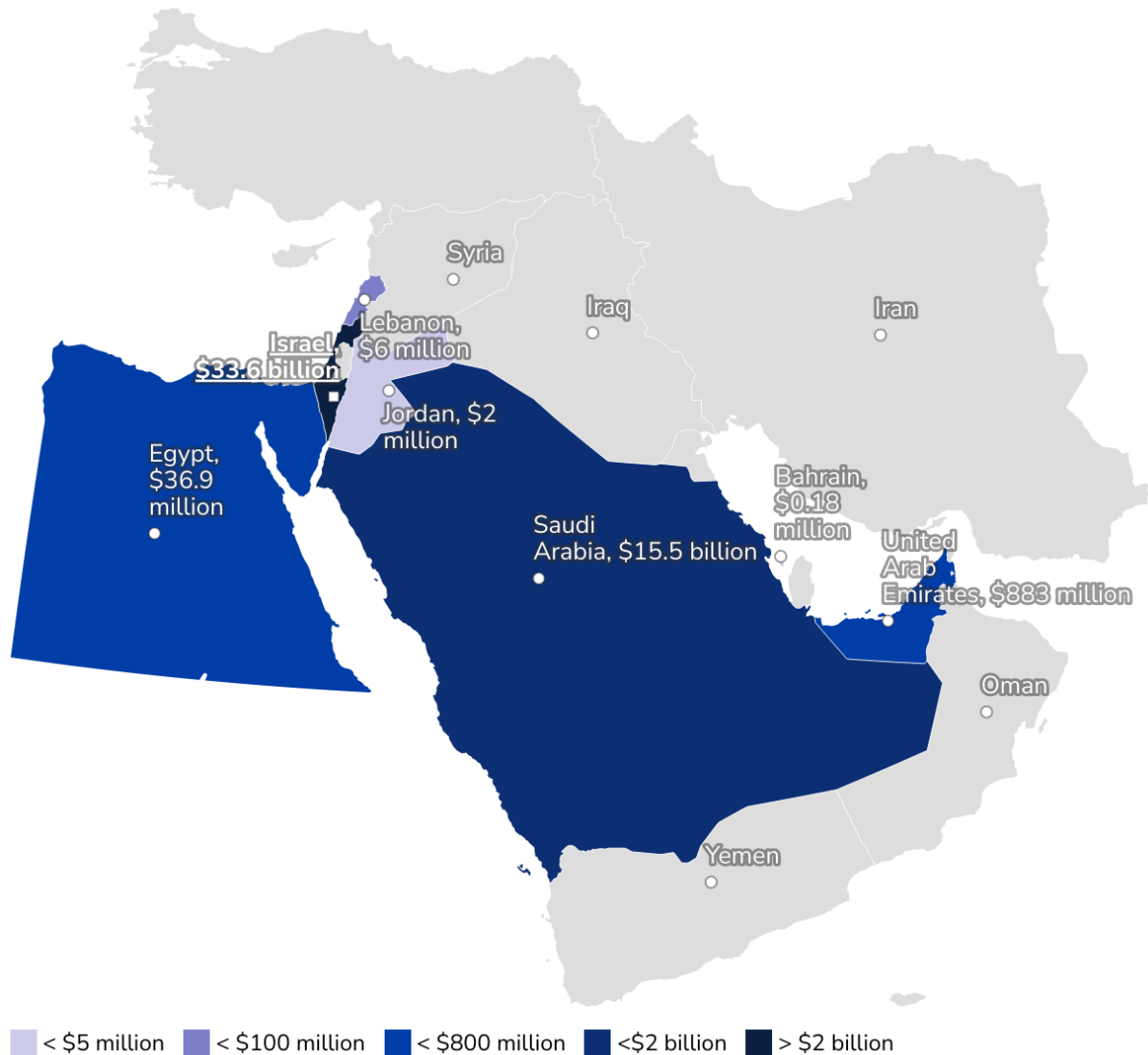
Finally, investors are sometimes reluctant to disclose the value of investments, and there is some missing data on how much capital was actually raised by a given AI company. In these situations, we estimated transaction value using a multistage estimation process where we assigned each round the median amount for funding rounds of the same investment stage, target country, and year.¹⁸ Our process adds these estimated transaction values with the disclosed values to yield the combined imputed values. We also reference transactions, which is simply a count of financial investments that occur irrespective of capital invested.

Despite these limitations, we believe the analysis presents a useful picture of the AI ecosystem in the Middle East broadly and Israel specifically, and some initial conclusions can still be drawn from observing foreign investment flows.

AI Investment Activity Across the Middle East

Across the Middle East, artificial intelligence markets are primarily located within seven countries: Israel, Saudi Arabia, United Arab Emirates, Egypt, Jordan, Lebanon, and Bahrain (Figure 1).¹⁹ Most have experienced at least some growth and have been attracting more private-market investments throughout the decade beginning in 2010 into present day.²⁰

Figure 1a: Imputed Investment Values into Middle East AI Companies, 2010–2021



Source: CSET analysis of Crunchbase

Figure 1b: Investment into AI Companies in the Middle East: Imputed and Disclosed Investment Values, and Transaction Counts, 2010–2021

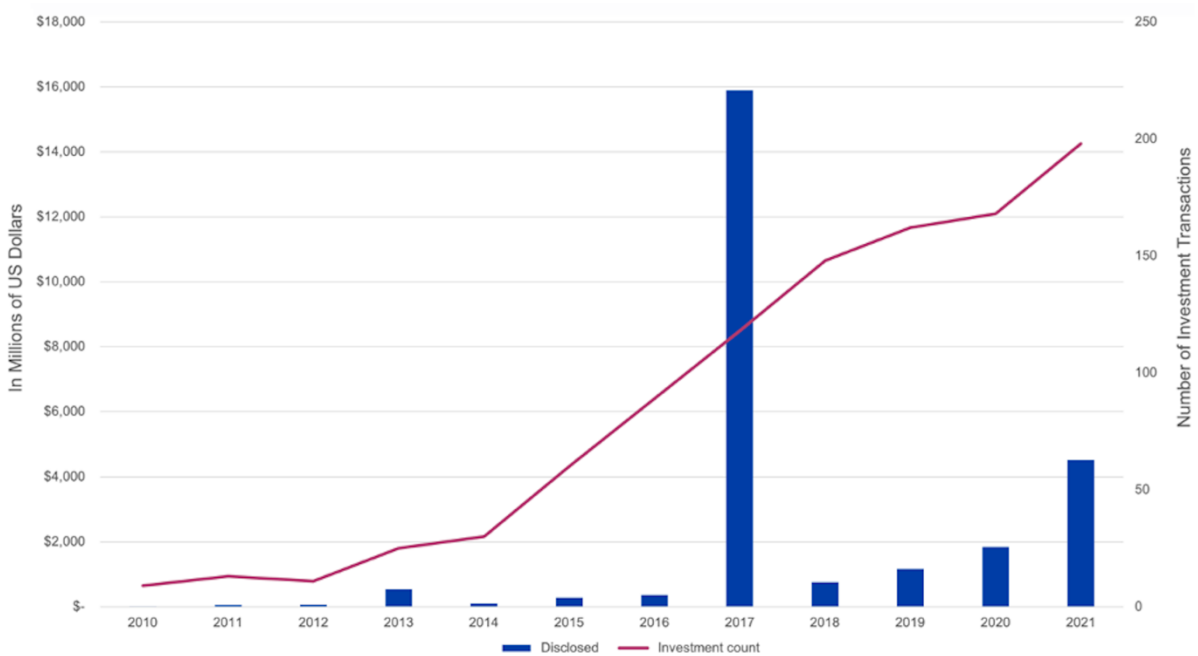
	▼ Imputed Investment Values (USD)	Disclosed Investment Values	Transaction counts
Israel	\$33.6B	\$25.6B	1,031
Saudi Arabia	\$15.5B	\$384.8M	119
UAE	\$883M	\$820M	29
Egypt	\$36.9M	\$35.2M	19
Lebanon	\$6M	\$1M	15
Jordan	\$2M	\$2M	7
Bahrain	\$183.5K	\$83.0K	7

Source: CSET analysis of Crunchbase

Among these seven countries in the Middle East, Israel has the largest AI market size by far. According to Crunchbase, it is home to 1,323 private-sector AI companies, double the count of the remainder of the region combined. These AI companies raised \$25.6 billion in disclosed value over 1,031 total investments from 2010 to 2021, although the estimated value of these investments is likely higher, at approximately \$33.6 billion.

Aligned with worldwide research, development, and commercialization advancements in AI, we see the pace of investment in Israel’s AI market has also increased substantially since 2010. For example, from 2014 to 2015, the number of investments doubled, and from 2015 to 2018, we note a period of substantial growth, as these investments began to rapidly accelerate from 60 observed investment transactions to 148. By 2021, they have grown to 198 investment transactions—an increase of 2,100 percent since 2010.

Figure 2: Investment into Israeli AI Companies: Transactions and Values, 2010–2021



Source: CSET analysis of Crunchbase

This increase in AI investment transactions also comes with a substantial increase in total investment value. While annual disclosed AI investments in 2010 amounted to \$16.5 million, by 2013 annual investments increased to \$538 million—an increase of over 3,000 percent. In 2017, Israeli AI companies raised \$15.9 billion, \$15.3 billion of which was from Intel’s acquisition of Mobileye, a company that specializes in “vision-based advanced driver assistance systems that help prevent and mitigate collisions.”²¹ Despite the outsized impact of that deal, the trend from 2018 onward has been of continued incremental growth. In 2021, amid the COVID-19 pandemic, total AI investments still grew 145 percent from the previous year, to \$4.5 billion (Figure 2).

While Israel is the hub of AI investment activity in the Middle East, Saudi Arabia and the UAE are also paying increased attention to science and technology within their national agendas, as fluctuating oil markets, finite oil and gas reserves, and young workforces add complexity to otherwise stable, oil-based economies.²² The UAE has also made academic investments in AI, establishing the Mohamed bin Zayed University of Artificial Intelligence (MBZUAI) in 2019 with the aim of performing “transformative research, developing cutting-edge technology, and training creative and hardworking

talent.”²³ Despite these efforts, both countries have seen modest growth in the development of their AI ecosystems, with a few notable exceptions.

Saudi Arabia has the second largest AI market in the Middle East when comparing the number of active private AI companies listed on Crunchbase, investment transactions, and overall investment value, though it still significantly lags Israel’s markets. From 2012 to 2016, private equity AI investment deals in the kingdom were in the single digits annually. In 2017, we saw the number of investments increase, and between 2018 and 2019, the number of investment transactions nearly doubled from 16 to 31 investments. Since 2012, 225 Saudi AI companies raised a disclosed total of \$384 million and imputed \$15.5 billion across 119 transactions. Falling just outside of the timeline of this dataset are notable investments, including private equity investments in companies such as Lean Technologies, which received \$33 million in January 2022, and Nana, which received \$13.32 million in early 2022.

In the UAE, AI investments began in 2015 and, through 2021, Crunchbase data shows only 29 investment transactions have taken place among their 208 AI companies. However, the annual imputed investment values more than doubled each year since 2018. In 2021, American private equity firm Silver Lake invested about \$800 million in G42, an Abu Dhabi-based AI company and cloud computing technology holding group, which bumped overall AI investments in UAE AI companies to \$816 million (albeit primarily due this single transaction).²⁴ G42 is also notable for launching a \$10 billion technology expansion fund in August 2022, and taking the role as lead investor in a \$500 million funding round for UAE-based Astra Tech.²⁵ It has also partnered with the UAE’s Department of Health and Chinese pharmaceutical company Sinopharm CNBG in a joint venture, goals of which are “knowledge transfer from experienced global players” as well as infrastructure, strategy, data sharing, and Intellectual Property (IP) generation.²⁶

Egypt, Lebanon, Jordan, and Bahrain round out the other regional AI markets, though they significantly lag in both the number of investment transactions and in total transaction value. Egypt has experienced slower growth, with 68 AI companies, 19 total transactions, and imputed investment values of \$36.9 million identified from 2016 to 2021. Again, we do observe recent years experiencing more growth, with \$34.1 million of investments occurring in 6 different transactions in 2021. We find 14 companies in Lebanon receiving 15 total AI investments totaling just under \$6 million imputed investment value. Lastly, Jordan and Bahrain trail in distant 6th and 7th places,

with Jordan sitting at around \$2 million imputed investment and Bahrain yet to achieve \$1 million.

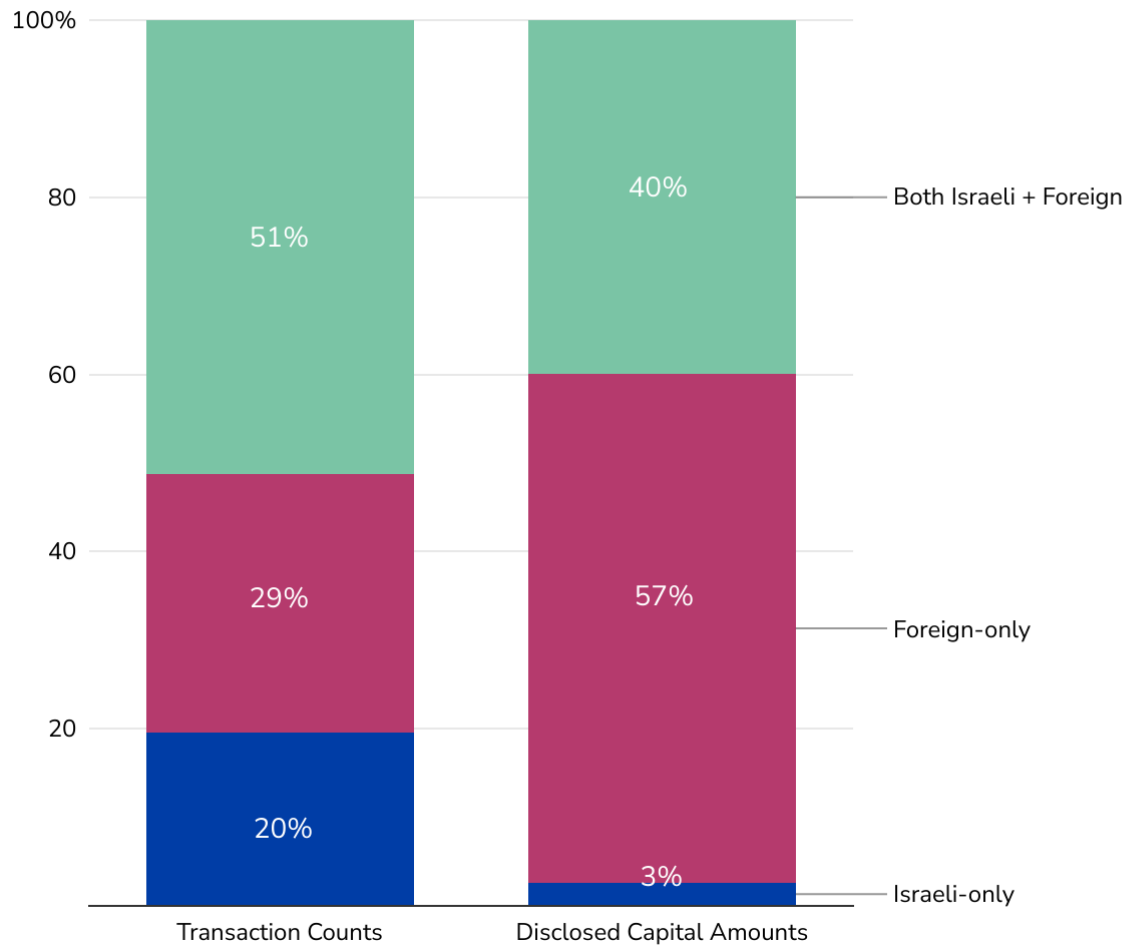
Israeli AI Investments

Makeup of Foreign Investments

In the late 1990s and early 2000s, the dot-com bubble triggered large volumes of investments into Israel, including its high-tech sector.²⁷ Policymakers in Israel have continued to be active in their encouragement of foreign investments as an important component of its national strategy.²⁸ Specifically, Israel is heavily reliant on steadily increasing VC investments—investments where a company invests in Israeli companies, production, or start-ups, as opposed to investments within the stock market or other publicly traded companies—from the United States.²⁹ Examples of VC funding rounds—angel, pre-seed, seed, Series A, and Series B—“typically involve earlier-stage target companies and smaller transaction values.”³⁰ In 1999, Israel came in second behind the United States in invested private equity capital as a percentage of GDP; by 2018, Israel overtook the United States and ranked first.³¹

When measuring investor composition of private AI investments since 2010 for this analysis, we found nearly 80 percent of the investment transactions targeting Israeli AI companies included at least one non-Israeli investor on the transaction. Twenty-nine percent of all the investment transactions funding Israeli AI companies over this decade were made up entirely of foreign investors. Meanwhile, 20 percent of transactions had only Israeli investors (Figure 3).

Figure 3. Share of Domestic, Foreign, and Overlapping Investment Transactions and Capital Amounts in Israeli AI Companies, 2010–2021



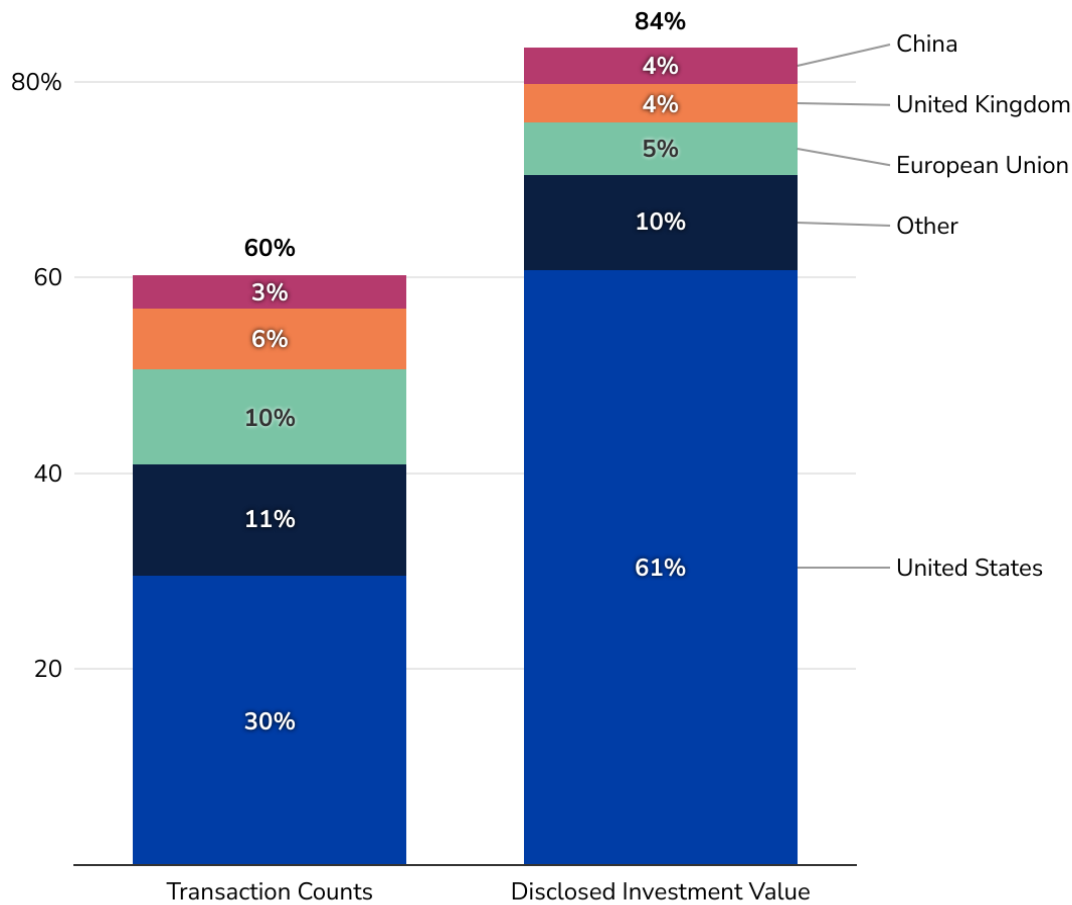
Source: CSET analysis of Crunchbase

While Israeli investors were present in the majority (71 percent) of transactions, only 43 percent (rounded) of disclosed capital is contained in deals with Israeli investors, including co-investments.

American investors participated in 476 transactions between 2011 and 2021, or 30 percent of the total number of transactions analyzed (Figure 4). These transactions, however, amounted to more than \$22 billion, meaning that American investors took part in deals that brought in about 61 percent of the disclosed capital Israeli AI companies received between the years 2010 and 2021. Again, drawing any direct conclusions from this value is challenging due to the missing transaction value and the disambiguated value from each individual investor. This does not mean that American

investors contributed this entire amount; rather, that transactions involving U.S.-based investors ended up comprising a majority of funds that Israeli AI companies disclosed they have raised during this time.

Figure 4. Foreign Investment Transactions and Capital Amounts in Israeli AI Companies by Country, 2010–2021



“Other” includes Japan, Singapore, Canada, France, South Korea, and various other countries
 Source: CSET analysis of Crunchbase

Investors from the European Union single market are present on 10 percent of investment transactions targeting Israeli AI companies, followed by investors from the United Kingdom, which take part in 6 percent of transactions targeting Israeli AI companies. Investors from the EU and the UK tend to invest substantially less often than their American and Israeli counterparts.

Meanwhile, Chinese investors have participated in only 3.4 percent of the transactions funding Israeli AI companies during this period. These transactions comprise 4 percent of investment values, amounting to just over \$1.38 billion. Other notable countries as measured by proportion of investment transactions include Germany (3.9 percent), Japan (2.5 percent), Singapore (2.3 percent), Canada (1.7 percent), France (1.4 percent), and South Korea (1.4 percent).³²

There could be several reasons for the extensive presence of U.S. investments in Israeli AI markets. There are institutional arrangements that specifically encourage participation between Israel and the United States and have led to heightened cooperation. In the 1970s, the Binational Industrial Research and Development Foundation (BIRD) and the Binational Agricultural Research and Development Fund (BARD) were formed, as well as the Binational Science Foundation (BSF). These funds have led to 1.4 billion dollars of investments into science and technology companies and academic institutions in the United States and Israel.³³

Some academic research also indicates that growth in overseas private equity investments between two countries can be linked to country characteristics, including “geographical distance [and] common language.”³⁴ English is the most widely spoken foreign language in Israel, and its widespread use could contribute to the large number of American investors there.³⁵ There are also indications that U.S.-based capital firms seek to “reach new markets with growth potential and find new technology hotspots,” and Israel may provide this attractive technology hotspot.³⁶ Additionally, overseas investors tend to bring more than just funding; “strategic advice, industry knowledge, contacts, and reputation” are all possible benefits of venture capitalists, and it’s therefore possible that Israeli AI companies seek out external investors to leverage these advantages.³⁷

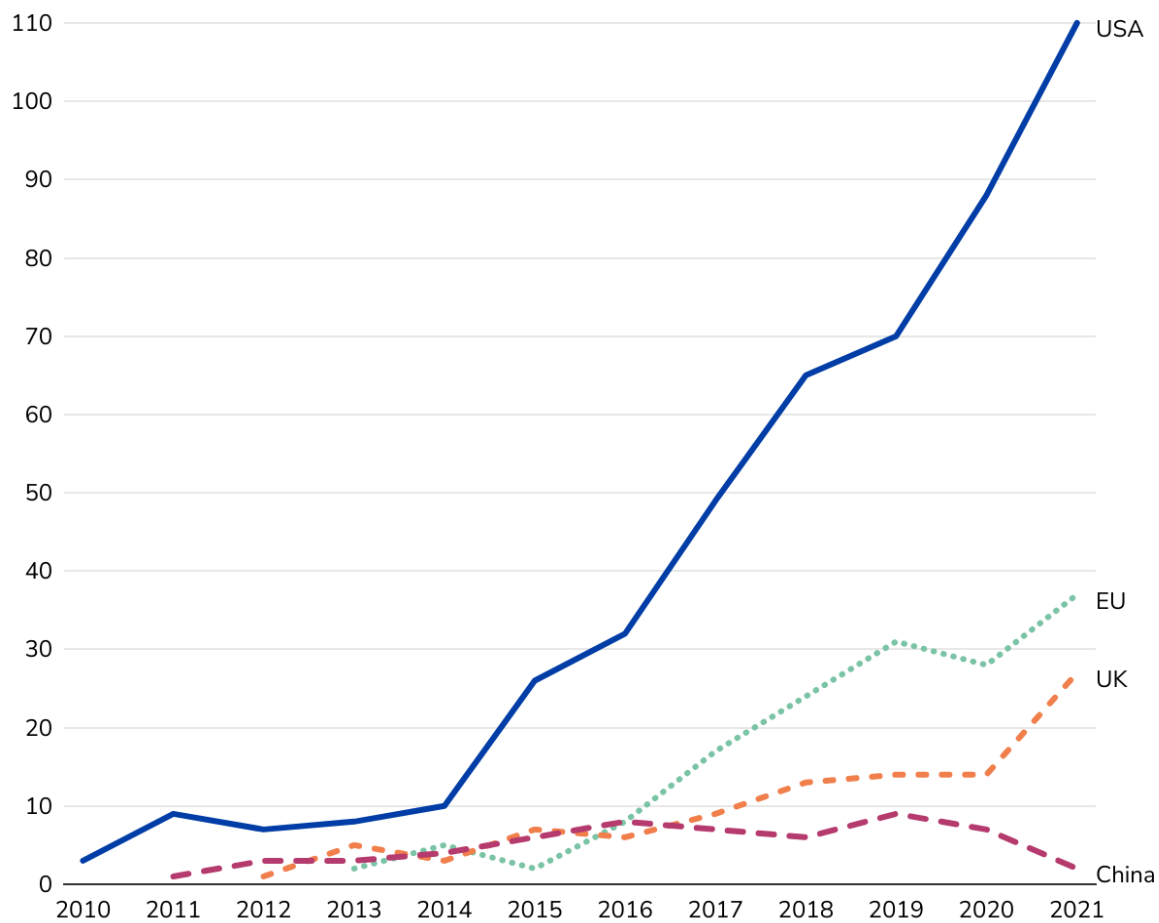
Management quality and entrepreneurship skills are also linked to growth in cross-border investments.³⁸ It is possible that Israeli AI companies can attract cross-border investments by employing those who are perceived to have these skills. Many start-ups in Israel, including those using “predictive intelligence,” are built or staffed by former Israeli Defense Forces personnel who bring a particular set of technical skills and knowledge that may be attractive to certain investors.³⁹ Lastly, legal protections are a key factor in “the size and extent of a country’s capital market and local firms’ ability to receive outside funding.”⁴⁰ In 2019, Israel was ranked 35th in the world by The World Bank’s “ease of doing business” metric, similar to countries like France and Switzerland, and 31st globally on the 2022 Corruption Perception Index from Transparency

International, indicating that outside investors view Israel as a country with relatively strong legal protections and low corruption.⁴¹ That said, it is possible that the perceived benefits of investing in Israel could be diminished by the increasing uncertainty amid recent widespread protests, causing some investors to consider incorporating their tech start-up companies in the United States instead.⁴²

Trends in Foreign Investments

Turning from the aggregate totals to trends over time in investments in Israeli AI markets since 2010, we note the following. Generally, investment transactions from American, European, and British investors are rapidly increasing and show no signs of slowing, though the trendline from the United States is increasing most rapidly (Figure 5). In 2010 and 2011, there were only five total deals involving investors from the United States, European Union, and United Kingdom. By 2021, that number had increased to 174 total investments, with almost no years of stagnation or decline. As indicated in detail later in this paper, China's investment transactions have been comparatively flat.

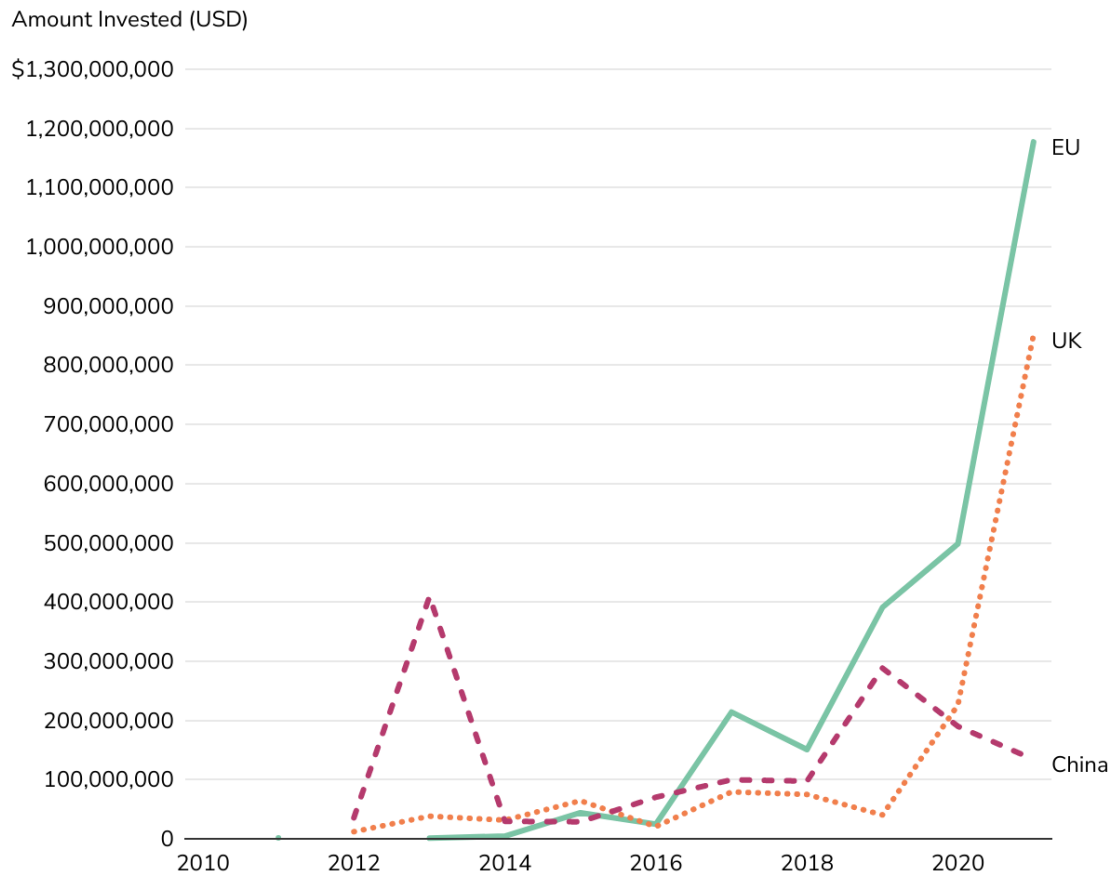
Figure 5. Investment Transactions into Israeli AI Companies from Investors in the United States, European Union, United Kingdom, and China, 2010–2021



Source: CSET analysis of Crunchbase

Total investment capital from the United States has also steadily increased since 2010, with these deals growing from just over \$7 million to \$3.27 billion eleven years later in 2021. We see similar rises with deals with European investors present, which have ballooned from \$1.6 million to \$1.2 billion, and deals with British investors present, which have increased from \$4 million to \$851 million (Figure 6). The step rise in the capital invested through deals with American, European, and British investors all represent exponential interest in these Israeli AI companies, ranging from 45,000 to 21,000 percent growth over the past decade or so.

Figure 6. Disclosed Investment Values from Transactions Involving Investors from the United Kingdom, European Union, and China into Israeli AI companies, 2010–2021



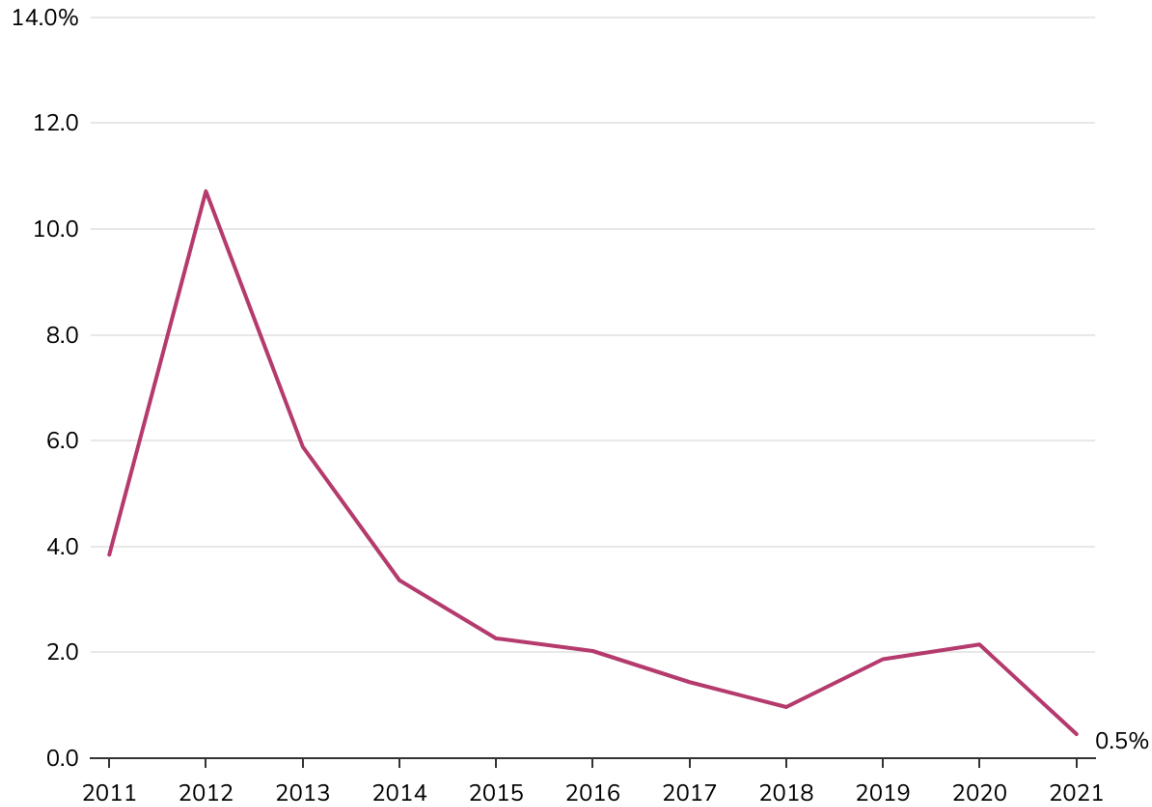
Source: CSET analysis of Crunchbase

In contrast to their American, European, and British counterparts, Chinese investors have played a limited role in helping to fund the growth and commercialization of Israel’s private AI companies. Despite 11 years of analyzed Crunchbase data, never have Chinese investors participated in more than 10 total transactions a year investing in Israeli AI companies. The transactions that we do observe indicate limited growth, stagnation, then decline. When comparing the annual delta for Chinese investments, five times we observed increases (2011–2012, 2013–2016, 2018–2019). In five other cases, however, transactions either decreased or stayed the same, including when falling from their peak of nine transactions from 2019–2021. These few observations—coupled with their decline beginning in 2019—make it difficult to draw conclusions on the likelihood of future Chinese transactions using this data. Based on data from this

past decade, Chinese investment activity does not have the same upward trend as transactions with investors from the United States, United Kingdom, and the European Union. Moreover, while deals with Chinese investors in Israeli AI companies have grown in total value over the decade (277 percent increase), they are recently down 54 percent from their peak in 2019, to \$134 million (Figure 6). This may be due to the COVID-19 pandemic and associated market variability over the last few years, changing economic conditions in Israel, changing strategy from the Chinese government affecting Chinese investors, or a combination of these and other factors.

This downward trend in Chinese investment in Israel's otherwise burgeoning AI market does not reflect the trend of Chinese investments in AI companies outside of China more generally. In fact, in 2012, investments into Israeli AI companies made up about 10 percent of China's total investments in AI companies worldwide, when calculated based on the number of investment transactions involving investors from China (Figure 7). By 2021, the share of investment transactions directed toward Israel's AI companies had plummeted to .5 percent, again mostly due to Chinese investors growing much more active in pursuing AI-related investment opportunities elsewhere abroad, including and predominantly in the United States, which has the largest AI market in the world. China's global AI activity is continuing its rapid increase and last year totaled \$6.3 billion. By contrast, we do not observe a rapid increase in Chinese investment activity in Israeli or Middle Eastern AI companies more broadly.

Figure 7. Chinese Investment Transactions in Israeli AI Companies as a Percentage of Chinese Investment Transactions into AI Companies Globally



Source: CSET analysis of Crunchbase


































Although Chinese investors have been less and less active in Israel’s AI markets since 2019, a closer look at top investments suggests that Chinese investors tend to pursue investment opportunities in Israeli AI companies that have other foreign investors from the European Union, the United States, and Israel. In one example of a Chinese acquisition, in 2019 Alibaba Group acquired Israeli company Infinity Augmented Reality for an undisclosed amount. That company raised a total of \$25.5 million over three funding rounds, and had previously received investments from the United States, Japan, and Israel.⁴³ Such investment behavior is not necessarily surprising. AI startups and companies looking to grow often try to raise capital from multiple investors located in more than one country. At the same time, promising AI companies that stand to deliver a high return on investment tend to attract capital from numerous funders across different countries. Indeed, investors from different countries often come together on

deals, including in the AI space, because it can increase the rates of financial return, reduce operational uncertainty driven by unfamiliar markets or projects, and lower competition in bidding.⁴⁴

That said, funding from Chinese sources is important to note because some investors have either ties to the Chinese government or outright government funding, which enables them to evaluate large groups of companies and can position them “to facilitate large technology transfer plays.”⁴⁵ Previous research has shown that Chinese venture capital investments, especially in the United States, tend to target firms in industries the Chinese government has identified as strategically important, such as AI, autonomous vehicles, virtual reality, robotics, and blockchain technology, raising concerns that such investments could enable Chinese firms to acquire valuable U.S. technology and intellectual property.⁴⁶ Overall, while co-investment is a common practice in the private investment sector, it is useful to be aware that investment from Chinese sources—especially in technologies such as artificial intelligence, with potential dual-use applications—could heighten the risks of technology transfers to China, which could undermine the technological innovation and national security of the United States and allies, including Israel.

Now, when looking at the top 10 Israeli AI companies that raised significant capital from investors from the United States, China, and the European Union, it appears that Chinese investors are absent in eight of 10 of companies with the most U.S. investments (Mobileye and Optibus being the two exceptions, Figure 8). Whether this is due to a “chilling effect,” where U.S. investors are beginning to intentionally avoid investment deals in Israel that would include Chinese counterparts, or whether this is intentional Chinese strategy is difficult to say.⁴⁷ Another reason could include Israeli companies or investors realizing that cooperating with Chinese investors could “severely limit their access to American capital and markets.”⁴⁸ What is clear is that the top Chinese investors are more likely to invest in Israel’s AI companies that enjoy a wider array of multinational investors; Innoviz Technologies, The First Digital, Sight Diagnostics, Halio, Intuition Robotics, Optibus, Pliops, and Arbe are some notable examples (see rightmost columns of Figure 8). It is also noteworthy that while Chinese investors are largely absent from the deals funding Israeli AI companies that have garnered the most capital from U.S. investors, they often take part in deals where EU investors are present (6 of 10).

Figure 8. Top Investments in Israeli AI Companies by Country of Investors (Plus Co-investors)

	Top Total Investments	Top United States Investments	Top EU Investments	Top Chinese Investments
1	Mobileye* 	Mobileye* 	Autobrain 	Mobileye* 
2	Innoviz Technologies 	Prospera Technologies 	Innoviz Technologies 	Innoviz Technologies 
3	REE Automotive 	OptimalPlus 	Hailo 	The First Digital 
4	Hailo 	Mobileye* 	proteanTecs 	Sight Diagnostics 
5	Mobileye* 	AnyVision 	The First Digital 	Hailo 
6	AnyVision 	REE Automotive 	Upstream Security 	Intuition Robotics 
7	Prospera Technologies 	Lightricks 	Sight Diagnostics 	Optibus 
8	Autobrain 	Optibus 	Pliops 	Cipia** 
9	Lightricks 	proteanTecs 	Arbe 	Cortica 
10	Arbe 	Valens Semiconductor 	Buildots 	Arbe 

*Mobileye was acquired by Intel in 2017. After this date, the company displays in Crunchbase as “Mobileye, an Intel company.”

**Formerly Eyesight Technologies

Source: CSET analysis of Crunchbase

Of these top 10 Israeli AI companies that received the most capital from Chinese investors, six companies create products for autonomous vehicles, synthetic vision, robotics, or edge computing.⁴⁹ None of these companies appear to be overtly marketing to the defense industry or otherwise building what might be considered security or military technologies. However, it is important to reiterate that “AI is thoroughly ‘dual-use’ technology,” meaning that AI-related innovations and applications can be used for both civilian and military purposes.⁵⁰ In this sense, these AI companies are developing technologies that could pose a higher risk of enabling security or military applications, should technology transfer to China occur.

Overall, this report finds that investment from the United States plays an important role in financing innovation and growth across the Israeli artificial intelligence technology sector. Although our data suggests that China’s investment in Israel’s AI ecosystem is limited (by both total investment capital and investment transactions), it is still true that Chinese investors are present in many of the top investments into Israeli AI companies.

Risks, Opportunities, and the Way Forward

The United States and Israel are aware of the growing strategic nature of technology competition and have recently indicated their interest in a closer partnership in these areas. In July 2022, the White House announced joint plans with Israel to establish “a U.S.-Israel technological partnership on critical and emerging technologies and solutions to global challenges.” The White House announcement continues:

“The United States-Israel relationship reflects our shared values and interests and the true friendship between our peoples. We pledge to boost our mutual innovation ecosystems, to deepen bilateral engagements, advance and protect critical and emerging technologies in accordance with our national interests, democratic principles and human rights, and to address geostrategic challenges.”⁵¹

To address these geostrategic challenges surrounding artificial intelligence and its continued development in the Middle East, leaders from both the United States and Israel should consider the following.

Risks from Chinese Technology Investments

Policymakers from the United States increasingly view China’s advancements in artificial intelligence as a strategic challenge, while the broader economic and technological competition between the two nations continues to intensify.⁵² In 2019, President Trump directly warned Israeli Prime Minister Benjamin Netanyahu that cooperation with China could have implications for the security relationship between the United States and Israel. This warning was followed shortly thereafter by similar warnings from Secretary of State Mike Pompeo and Secretary of Energy Dan Brouillette.

As noted by Newsweek in 2022, the United States and Israel “share deep defense and innovation ties in areas such as drone technology and artificial intelligence, so China’s focus on acquiring emerging digital technologies raises concern about backdoors into U.S. technology and unwanted tech outflow (leaked secrets) from Israel.”⁵³ Additionally, the United States has sounded the alarm of “straw companies,” who attempt to partner with companies in Israel and have the appearance of legitimacy but are actually intended to transfer novel defense or dual-use technologies to China.⁵⁴

Warnings from the United States as well as a growing awareness of national security risks may well be leading to action; in late 2019, Israel released a policy for the express purpose of foreign investment screening.⁵⁵ In 2022, Israel's Ministerial Committee on National Security Affairs updated this policy, titled “Establishment of a Process and Mechanism for Examining National Security Aspects of Foreign Investments” (קביעת) (תהליך ומנגנון לבחינת היבטי ביטחון לאומי בהשקעות זרות). The policy enables regulation on foreign investments by a Ministry of Finance-operated advisory committee in two instances:

- 1) to prevent “the creation of a position of substantial influence on the object of the foreign investment by a foreign party that might detract from the state's security or its foreign relations...”
- 2) “preventing the exposure or disclosure of information to a foreign entity that could harm national security or foreign relations, to the extent that these interests affect the national security of the State of Israel.”⁵⁶

In addition, this policy includes a mechanism for the Israeli National Security Council—after receiving inputs from the Defense, Foreign Affairs, and Cybersecurity Authorities—to formulate a “reasoned opinion in writing” on flagged investments to the advisory committee.⁵⁷ Previously, the committee could intervene at 50 percent foreign ownership, but in the updated policy this has been lowered to 20 percent. In extreme cases where the committee presumes that there “could be significant harm” to national security, the mechanism can be enacted if any stakeholder is “not a citizen or resident of Israel.”⁵⁸ Additional improvements, such as upgrading the status of the Ministry of Foreign Affairs from observer to full member of the committee, show that Israel is attempting to tighten its policy and recognizes that there could be diplomatic challenges to doing so.⁵⁹

While these investment controls have the potential to reduce unwanted technology transfer or intellectual property theft by China, it is yet to be seen if these will be effective for the technology sector or for AI companies. Also, more analysis is required to know if recent Israeli policies are connected to the recent decline in Chinese AI investments. However, it does appear that Israel is attempting to gain more awareness of which investments and companies may be vulnerable to intellectual property theft, technology or knowledge transfer, or acquisition by Chinese investors. This awareness is key to both maintaining economic prosperity and protecting valuable dual-use technology developed in Israel, often with the backing of American venture capital

funding. Israel should continue to explore how tighter investment screening might reduce economic risk from exploitative Chinese practices.

Opportunities for United States-Israel AI Partnership

In September 2022, the U.S.-Israel Strategic High-Level Dialogue on Technology had their senior representatives meet in Washington, D.C., and establish working groups to increase further collaboration. On the docket: artificial intelligence and trusted technology ecosystems.⁶⁰ While this report did not evaluate the role of AI policy within Israel, this could be an area for future alignment with the United States. Israel has yet to release a national strategy for AI, though such work appears to be in progress, with the stated aims to “promote AI in academia and research and development, as well as in the country’s high-profile tech industry.”⁶¹ Greater policy alignment between the United States and Israel, on everything from economic strategy to standardization of AI terms and definitions, is critical to the development of responsible AI.⁶² The U.S.-Israel Strategic High-Level Dialogue on Technology can serve as a starting point for such policy alignment as related to trusted technology ecosystems; for instance, by advancing collaboration and coordination on risk mitigation efforts in areas such as “research security, export controls, and investment screening.”⁶³

These are notable first steps. Other initiatives, such as the U.S.-Israel AI Research and Development Center recommended in the Senate in 2022, could also bolster cooperation between the two countries and ensure tighter future alignment in artificial intelligence development.⁶⁴

The Way Forward for AI in the Middle East

In 2020, the “Abraham Accords” sought to normalize relations between Israel and several of its regional neighbors and open new pathways for cross-border partnerships not yet seen in the modern Middle East. Investing in high-tech start-ups and innovative AI companies provides one potential area of cross-border regional partnerships, though we did not observe these taking place yet in our analyzed data. Beyond the investment space, research partnerships could be forged between new AI academic centers underway in Israel (TAD Center for Artificial Intelligence & Data Science) and the UAE (Mohamed bin Zayed University of Artificial Intelligence), further strengthening relationships and building important networks for future AI development in the region.

The United States could be an important multilateral partner for willing nations desiring to increase technology ties in the Middle East. The aforementioned U.S.-Israel Strategic High-Level Dialogue on Technology provides a framework for what a wider AI partnership could pursue: policy alignment, addressing mutually agreed-upon regional challenges, and increased partnership in commerce that includes identifying and removing barriers to innovation. The United States can also continue to lead in raising awareness in both Israel and the Middle East about Chinese anticompetitive business practices and risks from technology transfer.

Finally, there are many areas available for further research and analysis. As one example, this paper did not consider in detail AI academic efforts within Israel or the Middle East: research, collaborations, university agreements or partnerships, and technical certification or professional education development. It also did not evaluate procurement or patent data, nor did it analyze potential case studies on AI products emerging from Israel or the Middle East, and how those technologies might be specifically at risk to Chinese exploitation. Additional study in these areas would be welcome and would add to a more holistic understanding of the AI landscape in the Middle East.

Conclusion

Several key findings emerge from this report on AI-related investments in Israel and the broader Middle East between 2010 and 2021. Over this time, Israel has developed by far the largest AI ecosystem in the Middle East as measured in AI companies and financial investments, with Saudi Arabia and the UAE a distant second and third, and the rest of the Middle East yet to see significant growth in AI.

Foreign investors play a critical role in Israel's AI market growth, with the most significant investment activity coming from the United States. Foreign investments from the United States and allies, including the European Union and the United Kingdom, appear to be continuing their trajectory of growth and show no indications of slowing. Investors from the United States are by far the most significant players in Israeli AI companies, present on investment activity comprising 61 percent of total investment capital.

Our findings suggest that China is currently not a major investor in Israel's AI ecosystem. Chinese AI-related investment activity within Israel is extremely limited, significantly trailing investments from the United States in both number of transactions and investment amounts. The top Chinese investors tend to participate in investment deals alongside a large set of multinational investors, rather than as the sole foreign investment entity. Chinese investments in Israel's dynamic AI sector have also recently been trending downward, even though Chinese AI investments globally have increased.

This is not to say that because investments are decreasing, there is no risk of Chinese technology transfer at Israeli companies, including those backed by investors from the United States. Of the top Israeli companies that have attracted Chinese investments, six of these companies deal with autonomous vehicle technology, synthetic vision, or computing for edge devices, raising concerns that China could be targeting these technologies for what appears to be the next competition space in defense-related applications. Future steps for strategic partnership in AI between the United States and Israel will need to address these potential risks to ensure continued economic prosperity and security for both nations.

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The views expressed in this article are those of the authors and do not necessarily reflect the official policy or position of the U.S. Air Force, the Department of Defense, or the U.S. Government.

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