

## High Tech Puts Israel in the Black

Its booming technology sector, both homegrown startups and huge foreign companies, is propelling the Jewish state to rapid economic growth

by [Neal Sandler](#)

After its founding in 1948, Israel ran chronic balance-of-payments deficits for decades. Only U.S. economic and military aid, along with cash from mainly Jewish donors, offset the red ink. But in recent years Israel has started producing substantial trade surpluses thanks to its booming high-tech sector, which is arguably second only to California's Silicon Valley in innovation.

In fact the technology sector, which has been expanding at a 10% to 20% clip since 2003, has played a key role in the longest period of rapid economic growth in Israel's 60 years of existence. The economy has grown by 5% or more for four straight years, and even amid the current global economic shakiness is projected to grow around 4% this year.

Much credit goes to the rise of high-tech industrial parks scattered around Israel, dubbed "Silicon Wadis" (from the Arabic word for "valley"), that are today home to hundreds of foreign companies and long-standing Israel success stories such as Teva Pharmaceutical ([TEVA](#)) [ECI Telecom](#) and defense technologies maker Elbit Systems ([ESLT](#)). They also house many of the country's estimated 3,000 startup companies—giving them the highest per-capita concentration of startups in the world.

### FOREIGN COMPANIES JOIN HOMEGROWN SUCCESSES

The surge of science parks, ranging from Haifa in the north to Kiryat Gat in the south, has helped put a dozen or so Israeli towns on the map of global tech hot spots. (See the attached slide show for an introduction to 12 of them.) Much of the activity remains centered in the greater Tel Aviv region in towns such as Herzliya, which is the center of Israel's venture capital industry. Academic institutions including the Technion, Weizmann Institute of Science, Hebrew University, and the Tel Aviv University have also played a key role.

Global tech giants including Intel ([INTC](#)), Microsoft ([MSFT](#)), Motorola ([MOT](#)), IBM ([IBM](#)), and Google ([GOOG](#)) have all established large local research and development facilities aimed at tapping the Jewish state's engineering talent pool. They take their place alongside homegrown success stories such as Check Point Software ([CHKP](#)), M-Systems ([SNDK](#)), Comverse Technology ([CMVT](#)), Amdocs ([DOX](#)), and Nice Systems ([NICE](#)) that have given Israel a reputation in telecommunications and software. In the past decade, more than 100 Israeli startups have gone public on the Nasdaq stock exchange, while U.S. and European companies have spent tens of billions acquiring Israeli firms.

Because of the small local market, Israel's tech sector lives on exports. In 2007 high tech accounted for 46% of the country's nearly \$34 billion in industrial exports. A decade ago, the ratio was just 36%. Besides driving industrial exports, the tech sector also is starting to play a significant role in services exports. Software and computer-related services rose from \$3.2 billion in 2002 to over \$6.1 billion last year.

### TALENT SHORTAGES IN KEY FIELDS

"The high-tech industry has, in effect, turned Israel into a country with a substantial balance-of-payments surplus," says Dan Peled, a Haifa University economist and program manager at the [Neaman Institute](#), a think tank that assesses links between society and technology. "The acquisition of hundreds of Israeli technology companies has contributed significantly to the inflow of capital into the country."

The high-tech sector now employs around 150,000, about 8% of the civilian workforce, but generates an estimated 15% of the country's gross domestic product. Israel tops the world in research and development spending as a percentage of GDP, at 4.4%. The next closest are Sweden and Finland with 3.7% and 3.5%, respectively. The U.S. spends about 2% of GDP on R&D.

Compared to the U.S. and some European economies, Israeli R&D investment goes further still. "The cost of an Israeli engineer is still about 80% of his counterpart in Silicon Valley," says Moshe Zviran, a Tel Aviv University management expert who tracks high-tech manpower. But the cost advantage has been eroding in recent years with the [strength of the Israeli shekel](#) (BusinessWeek.com, 2/7/08) and a 5% annual increase in wages in the past three years. Israel is also facing competition from India and China, where engineering wages are a mere fifth of local levels.

Unlike the mid-1990s, when immigrant flows from the former Soviet Union kept supplies of talented engineers high and wages down, incoming engineers today come primarily from Israel's academic institutions—and there aren't nearly enough of them. Currently there are shortages in key fields such as software engineering. Experts warn that the country's [troubled educational system](#) (BusinessWeek.com, 11/8/07) and a brain drain could have a negative impact on the future of Israel's world-class high-tech industry.

For a look at Israel's high-tech hot spots, see our [slide show](#).

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