Israeli Force Development: Confronting Capital and Labor Tradeoffs

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As a state that exists under the shadow of conflict, both domestic and international, Israel faces a complicated set of choices in every area of governance, including with its defense strategy. With a population of almost 8.5 million people, according to the World Bank in 2015, Israel's population is 2.5% of that of the United States, and the state of Israel controls territory about equal to the US state of New Jersey.

Israel's military faces some dilemmas that it will have to navigate over the next generation, and which academic research suggests will be challenging. As a small country, Israel has always lacked the strategic depth necessary to absorb a truly significant blow from a conventional adversary and respond in kind. To prevent this situation from arising, Israel needs to be able to repel adversaries at its borders, requiring capable, ready conventional military forces. However, while the largest potentially existential military threats to Israel come from abroad, the Israeli military most frequently operates in less conventional military operations, especially most recently in the Gaza Strip (e.g. Operation Cast Lead and Operation Pillar of Defense). And the most common Israeli military operations involve not conventional warfare, but counterterrorism and counterinsurgency operations surrounding Israel's relationship with the Palestinians.

Given its relative wealth, political science research suggests that Israel would be increasingly likely to turn to capital, rather than labor, to provide for its defense. And this is exactly what Israel has done. In the 1982 Lebanon War, Israel pioneered the battlefield use of precision munitions and other aspects of the reconnaissance strike complex, though it was not until the mid-1990s that Israel really began embracing the potential to significantly extend its qualitative edge through technology. Throughout its history, despite filling out its ranks with conscripts, Israel has relied on highly trained soldiers operating advanced weapons to succeed.

The information age offers Israel the ability to exploit its relative capital advantage further for both its internal and external conflicts. The 3rd Offset strategy in the United States is based on the idea that emerging technologies such as cyber, robotics, autonomy, and others may contain the keys to military power over the next generation. Given its pre-existing research in military applications of robotics, Israel is a natural potential leader in this arena.

Israel has invested heavily, relative to its neighbors – and most countries around the world – in robotics and related technologies, while still recognizing the integral importance of its soldiers – its human capital – in generating military power. For example, Israel has been a leader in the development and deployment of unmanned aerial vehicles (UAVs). The Heron TP, built by IAI, has been purchased by several countries around the world, including Germany. India recently purchased an armed variant of the Heron TP. Investing in UAVs makes sense for a country such as Israel, which is wealthy but has a small population. Even though, at present, sophisticated UAV operations require a significant logistics tail, UAVs offer users the potential to usefully employ different personnel than fighter aircraft. Personnel who might not be qualified to fly fighter aircraft because they are too short, or overweight, or something else, might have the requisite reflexes and intelligence to operate UAVs. Thus, a labor-limited country such as Israel can make relatively more effective use of UAVs than many other countries.

Moreover, as UAV operations become more automated, UAVs offers countries such as Israel the ability to employ their capital in more effective ways that help them generate the same striking power with fewer personnel.

Israel has similarly been an innovator when it comes to the use of military robotics beyond UAVs. Israel's Guardium robot was one of the first ever unmanned ground vehicles deployed in a potential combat area – the Gaza border. With the ability to operate in a remotely-piloted and semi-autonomous modes, the Guardium system offers countries such as Israel the ability to significantly reduce the labor required for effective border operations. Though the company that built the Guardium, a joint venture between Elbit and Israel Aerospace Industries, folded in early 2016, that may have more to do with the joint venture being a few years too early for the market size than a lack of interest in solutions to the issue of border security that are less labor-intensive.

Israel also deploys the Protector, an Unmanned Surface Vehicle (USV) that supports Israeli maritime security operations. Elbit, an Israeli defense contractor, also revealed the Seagull, a mine-hunting USV, in early 2016. Both provide ways for Israel to decrease its reliance on inhabited, deployed vessels. Especially in the naval arena, since Israel does not face significant conventional naval challenges right now, the use of robotics – substituting capital for labor – could provide significant opportunities.

Robotics are not the only arena where Israel attempts to substitute labor for capital. Israel's Iron Dome missile defense system, which Israel used to allegedly shoot down 90% of incoming missiles at one point during its 2014 conflict with Hamas in the Gaza Strip, is another example of Israel investing in technology to protect its population (though the exact success rate of Iron Dome is contested in some quarters).

Given the predominance of counterterrorism and counterinsurgency activity in Israel's daily military operations, though, it's important to continue investing in personnel and tactics focused on those areas as well. High levels of human capital are especially necessary in these types of operations, which require attempting to win the hearts and minds of the local population.

A key question for Israel's military moving forward is how to optimize between these two needs. On the one hand, optimizing its military for policing and counterinsurgency operations related to the Palestinian question might suggest a shift towards labor, rather than capital, in some areas. Especially given the ongoing civil war in Syria, Israel has never been safer from the perspective of facing a potential conventional military invasion. Thus, investing in people for policing and counterinsurgency operations that rely less on the use of lethal force, makes sense (To be clear, highly trained personnel are critical to Israel's conventional military strategy as well).

However, the region could change quickly, and a reduction in Israel's conventional deterrent could yield long-term costs. It is thus possible that Israel's optimal force development strategy instead involves a high-low mix that emphasizes labor in some areas, and capital in others. For more personnel-heavy activities outside the context of conventional war, labor remains essential. Israel's use of conscripts also reduces the cost of the force relative to what it would have to pay for an all-volunteer force. For other, more conventional needs, it makes sense to continue to exploit their relative wealth & advanced technology to invest in capital solutions that lessen the effects of being labor limited.

It is easy for Israel, due to its technological sophistication, to avoid strategic planning concerning its future forces. As Adamasky argues, "Israeli military thought has not kept pace with the sophistication of

[IDF equipment](#).” As another technological age begins to dawn and Israel has to once again consider how to balance labor and capital in the way it constructs its military, deep thinking will be required within the Israeli military and national security sector writ-large to ensure that Israel is best prepared both for the highest risk and highest impact security challenges Israel faces.