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Egypt's Defense Industry: Dependency, Civilian Production, and Attempts at Autonomy

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Abstract

Egypt's defense industry is the oldest and largest in the Arab world. However, most of its military factories have converted into manufacturing consumer goods to the civilian market for profit. Meanwhile, they continue to produce traditional weapon systems that mostly do not respond to urgent needs to combat terrorism in asymmetric warfare. In addition, Egypt is largely dependent on U.S. firms for procurement and co-production. After a political crisis in 2013, the Ministry of Military Production (MoMP) has attempted to revive defense production through new co-production initiatives with international arms firms. The country also attempts to reduce its dependence on the U.S. by seeking procurement from other states such as France, Russia, and Germany. Such efforts remain noticeably limited, because the Egyptian military still focuses on its civilian business enterprises.

Keywords: Egypt, defense industries, military business enterprises

1. Introduction

Egypt's defense industry has a long history for the past six decades that renders it the oldest and largest among the Arab states. It started to expand in the 1950s-60s, and reached its peak in collaboration with Western manufacturers in the 1980s. However, it has suffered from a problem of dependency on Western technology, especially the U.S., and has limited R&D. This problem, and other economic reasons, led to substantial conversion of the military industrial base into civilian production for profit in the 1990s-2000s. For the past three decades, military factories have been mostly converted into manufacturing consumer or capital goods for the civilian market. Meanwhile, they have continued to produce traditional weapons systems that do not particularly respond to recent needs to combat terrorism and asymmetric warfare with scattered fundamentalist cells on the country's eastern and western borders. The last few years have witnessed a degree of change towards reviving arms production, especially after 2013 when a severe crisis with U.S. supply took place and a war on terrorist groups erupted. In today's Egypt, there are efforts to diversify sources of supply outside U.S. firms. In addition, there are ongoing attempts to achieve autonomy through co-production with international manufacturers. However, the outcomes of such efforts remain limited, as most

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of the Egyptian military's attention still focuses on its civilian business enterprises that target the domestic consumer market for profit.

This article investigates the historical roots and current realities of the Egyptian defense industry. It begins by presenting a historical background of the industry, emphasizing issues of dependency on Soviet and Western technology from the 1950s to the 1980s. This period was marked by generous government spending on developing the industry. The article then moves to the problematic period of massive defense conversion to civilian production in the 1990s-2000s, which took place due to the country's economic reform and liberalization scheme that entailed cuts in the military's budget. Such conversion came about in a global context in which many other states adopting neoliberal policies reduced military budgets and allowed their armies to engage in civilian business to compensate them for their financial losses. Finally, the paper looks at the past five years in the developments taking place in Egypt's defense industry under the current military president Abdel-Fattah al-Sisi. It, therefore, examines the regime's attempts at reducing dependency on the U.S. through seeking procurement from European suppliers while also concluding co-production agreements with European firms. While investigating these three periods between the past and the present, the article highlights domestic, regional, and global conditions that made the Egyptian state and its defense industry opt for certain decisions regarding procurement and partnership.

The article concludes with policy recommendations about advancing Egypt's defense industry as an emerging state in a globalized market. If Egypt seeks to join other emerging countries in arms manufacturing, its military factories that currently focus on production for the civilian consumer market should divest themselves of civilian business enterprises and re-focus on partnership efforts with international firms.

2. Historical Dependency: From the Soviets to the U.S. (1950s-1980s)

In the 1950s-60s, Egypt's defense industry started to develop within a socialist state and in a Cold-War context, when Egypt was aligned with the Soviet Union. The first military regime that ruled the country after the end of British colonialism, led by then young colonel Gamal Abd al-Nasser, sought to establish military power for the recently independent republic because of a combination of domestic, regional, and international factors. Egypt was a state with a national desire to build a strong army to defend itself against potential aggression from European imperial powers or Israel, similar to the Suez Crisis of 1956. The regime also had regional ambitions to expand its Arab nationalist and later socialist ideology against conservative Arab monarchies, such as Saudi Arabia, and their Western backers, which was reflected by their support for movements of national independence and socialist endeavors in other countries in the region.[1]

During this period, Egypt found itself caught between the two camps of the Cold War, and opted for the Soviet Union's side after the U.S. repeatedly declined Nasser's requests for arms deals and economic aid. Nasser turned Egypt into a socialist state in the early 1960s, and he followed an Import Substitution Industrialization (ISI) model to foster overall economic development. Thus, the regime invested in a nascent defense industry with an import-substitution plan, but primarily with Soviet technology. Nasser, for example, erected factories to manufacture Soviet automatic assault rifles and short-range ballistic missiles. With West Germany's support, it built a supersonic jet fighter. During this period, military

[1] See Zeinab Abul-Magd, *Militarizing the Nation: The Army, Business, and Revolution in Egypt* (New York: Columbia University Press, 2017), 35–77.

factories enjoyed exceptional financial support from the underdeveloped state's budget.[2]

However, the USSR noticeably granted Egypt limited access to technology transfer, and equipment manufactured by Soviet designs had to be shipped to Russia for maintenance. Moreover, after being defeated by Israel in 1967, and falling subsequently into an economic crisis, Egypt's defense industry severely suffered. The war economy's budget constraints and public austerity drastically affected spending on the arms factories. As a result, most Western manufacturers, such as West Germany, left the country and technology transfer attempts were aborted. As Florence Gaub and Zoe Stanley-Lockman indicate, "[t]wo years after the war, several programmes had to be shut down and three quarters of military industrial capacity diverted to civilian production, and the Ministry of Defence Production was abolished."[3] This situation continued through the 1973 war and for the rest of the 1970s, as the Egyptian economy was exhausted by two wars and unable to substantially invest in a largely halted defense industry.

In the 1980s, the Egyptian defense industry recovered with significant expansion, taking advantage of new shifts in international and regional conditions. Although Egypt's wars with Israel had ended in 1973 and a peace treaty was signed in 1979, the military remained the most powerful state institution. Under Field Marshal Abdel-Halim Abu Ghazala, Minister of Defense and Military Production from 1981 till 1989, the defense industry expanded tremendously by relying on Western technology. Abu Ghazala craftily re-positioned the Egyptian military and its arms production within fluid international and regional contexts and took advantage of them. Two ex-military presidents that Abu Ghazala served, Sadat (r. 1970-1981) and Hosni Mubarak (r. 1981-2011), had already switched Egypt's Cold-War alliances from the Soviet camp to the U.S., and this helped Abu Ghazala with concluding co-production deals with American firms. With many ambitious initiatives in existing or newly opened military factories, Abu Ghazala exported Egypt's increasing production of heavy and small armaments to neighboring countries— such as Iraq, which was engaged in a prolonged war with Iran. He also succeeded in concluding a co-production agreement of the M1A1 tank with the U.S.[4]

Abu Ghazala reactivated the Egyptian military's role within a global context of the Cold War as it was approaching its end. Because Egypt at this point was already on the U.S. side in this war, the Ronald Regan Administration annually granted $1.3 billion in military aid. As part of this aid package, Abu Ghazala successfully pressed the U.S. to sign an agreement of co-production for the M1A1 tank in 1987. Abu Ghazala convinced the U.S. assistant secretary of defense for international security affairs, who was then attending the annual meeting of the U.S.-Egyptian Cooperation Committee in Cairo, to go ahead with the project, and even identified a location for manufacturing the tank in a factory under construction in Abu Za'bal, north of Cairo. The U.S. sent a team to Egypt to inspect military production facilities that could be expanded and improved for new activities.[5] Prestigiously for Abu Ghazala, Egypt

[2] Abul-Magd, *Militarizing the Nation*, 35–7; Joe Stork, "Arms Industries of the Middle East" (MERIP Report 144, January–February 1987), 12–6.

[3] Florence Gaub and Zoe Stanley-Lockman, "Defence Industries in the Arab States: Players and Strategies," (European Union Institute for Security Studies, Chaillot Papers, March 2017): 18.

[4] See Abul-Magd, *Militarizing the Nation*, 78–111.

[5] *Foreign Assistance Legislation for Fiscal Year 1988–89 (Part 3): Hearings and Markup before the Subcommittee on Europe and the Middle East of the Committee on Foreign Affairs, House of Representatives, One Hundredth Congress, First Session, February 3, 10, 23, 25; March 3, 11, And 19, 1987*, 100th Cong. 140–41 (1987) (statement of Robert Pelletreau, Deputy Assistant Secretary for Near Eastern and South Asian Affairs, Department of Defense); Tony Walker, "US Sweeten the Pot for Defense Projects in Egypt," *Financial Times*, May 7, 1987.

was the first country to build this tank outside the U.S., and he hoped to produce 1000 to 1500 pieces. Nonetheless, he needed U.S. permission for intended exportation, and the Americans retained the right to veto any undesired re-sales. According to the *Washington Post*, Abu Ghazala "lobbied Washington for more than a year to get approval for the M1…and has overcome U.S. Army opposition in Defense Department Deliberations." However, the newspaper cited controversy in the capital about transferring sensitive military technology to Egypt, and critiques of Egypt's ambition to become a military power—a threat to Israel.[6]

In return for large aid and such military advantages, the U.S. had specific— albeit unwritten – regional expectations from Egypt. The long list included assisting in Persian Gulf security or the protection of the oil-producing Arab states; containing the radical Palestinian front and persuading the Palestinian Liberation Organization (PLO) to sit at the negotiating table towards long-term Israeli security; targeting Libya, as it was led by radical Mu'ammar al-Qadhafi, a close Soviet ally; watching Syria, as led by Hafez al-Assad, a recipient of heavy Soviet military aid who regularly intervened in Lebanon; targeting the new Islamic republic in Iran, a prominent enemy of the U.S. since the 1980 hostage crisis; and reducing communist influence in the Sudan by maintaining good and militarily cooperative relations with them and countering neighboring Qadhafi's intervention in the country. Throughout the 1980s, Egypt fulfilled its duty against Iran when it provided Iraq with weapons during its prolonged war against Iran's newly born Islamic republic under Ayatollah Khomeini, and militarily threatened Libya and was a few times on the brink of war with Qadhafi.[7]

General Dynamics collaborated with Egypt's Military Factory 200 in Abu Za'bal to modify this facility to adapt to producing M1A1 Abrams on a large scale. Egypt was to make 40 percent of the tank, and the rest was to be manufactured in the U.S. and assembled in Factory 200— which also repaired M60 tanks and produced light armored vehicles. It was the "best tank in the world," as U.S. Defense Secretary then asserted after signing the deal with Abu Ghazala at the end of 1988, authorizing him to produce only 524 tanks.[8] The factory opened for business in 1991. However, when the U.S. General Accounting Office (GAO) assessed the project a few years later, it concluded that the U.S. should not have responded to Egypt's pressure to engage in this expensive partnership. It was a $3.2 billion project, where the U.S. carried $2.491 billion and Egypt $663 million of the cost. A GAO report asserted that selling Egypt complete tanks was a much cheaper choice, with a cost of only $1.9 billion.[9] Moreover, the same report revealed that Egypt would not reach her hopes

[6] Patrick E. Tyler, "Pentagon Agrees to Let Egypt Produce M1 Tank; Move Expected to Draw Fire in Washington," *Washington Post,* June 29, 1987. Also see Michael Gordon, "U.S. May Allow Egyptians to Buy and Assemble M-1 Tanks," *New York Times,* June 30, 1987; Barbara Slavin, "A Tankful of Trouble for Egypt? Critics Say Co-producing M-1 Tanks is Misguided Show of Friendship," *St. Petersburg Times,* January 23, 1988.

[7] *Supplemental 1979 Middle East Aid Package for Israel and Egypt: Hearings and Makeup before the Committee on Foreign Affairs and its Subcommittee on International Security and Scientific Affairs and on Europe and the Middle East, House of Representatives, Ninety-Sixth Congress, First Session April 26; May 1, 2, 8, and 9, 1979, 96th* Cong. 152 (1979); *Foreign Assistance Legislation for Fiscal Year 1983 (Part 3): Hearings and Markup before the Subcommittee on Europe and the Middle East of the Committee on Foreign Affairs, House of Representatives, Ninety-Seventh Congress, Second Session, March 15, 23, 30; April 1 and 27, 1982, 97th* Cong. 14–15 (1982) (statement of Morris Draper, Deputy Assistant Secretary, Bureau of Near Eastern and South Asian Affairs, Department of State). *Also see Foreign Assistance Legislation for Fiscal Year 1988-89 (Part 3): Hearings and Markup before the Subcommittee on Europe and the Middle East of the Committee on Foreign Affairs, House of Representatives, One Hundredth Congress, First Session, February 3, 10, 23, 25; March 3, 11, And 19, 1987, 100th* Cong. Washington, D.C.: U.S. Government Printing Office, 1987.

[8] "Export Briefs…Egypt, US Sign Pact," *Journal of Commerce,* November 4, 1988. Also see "Egypt and U.S. Agree on a Joint Tank Plan," *New York Times,* November 2, 1988.

[9] United States General Accounting Office (GAO), *Military Aid to Egypt: Tank Production Raised Costs and May not Meet Many Program Goals,* GAO/NSIAD-93-203 (Washington D.C.: U.S. Government Accountability Office, 1993), 2.

of technology transfer and self-sufficiency in tank production through this project. "Six increments of production were initially planned, with Egypt progressively completing more of the tank. However, the plans for Egypt completing more of the tank in each increment have been reduced, limiting the production technologies transferred to Egypt…"[10] The report affirmed that the Egyptian goal from the project conflicted with those of the U.S. It stated, "from the program's inception Egyptian self-sufficiency was limited because, for security reasons, the United States retained control of key technology items needed to produce the tank," [11] and added that financial constraints made technology transfer minimal.

Aside from this complicated project, Abu Ghazala considerably expanded arms manufacturing after obtaining technology from various advanced sources, including Britain, France, and China. When Abu Ghazala assumed his position in 1981, two main state bodies were already engaged in arms production. The first was the Ministry of Military Production (MoMP), with 15 factories, 70,000 employees, and $240 million value of production. The second was the Arab Organization for Industrialization (AOI), with seven factories, 18,000 employees, and $100 million value of production. The latter was founded in 1975 in collaboration with three Gulf countries, Saudi Arabia, UAE, and Qatar, providing capital to build a strong Arab defense industry as it signed coproduction agreements with European firms. When Sadat signed the peace treaty with Israel, the three Gulf countries withdrew from the project and demanded their money back, while European partners were hesitant to continue. But Abu Ghazala carried on.[12] His expanded military plans reached 30 factories with about 100,000 employees and an average of $400 million value of production. His exports jumped from $30 million in 1981 to $550 million in 1988.[13] These plants assembled French jets, Chinese fighters, Brazilian trainers, British helicopters, British missiles, aircraft engines, guns and ammunitions, and much more. These systems attracted orders from oil-producing Arabian Gulf states and Egypt's African neighbors.[14] Interestingly, the U.S. granted Egypt the right to export arms to the American market, but experts opined that this agreement—signed between Abu Ghazala and U.S. Defense Secretary — was mainly symbolic.[15]

During this promising time, Egypt made considerable profits from arms sales, especially those to Iraq to use in its long war against Iran as well as to the Afghan *mujahidin,* who were backed by the U.S. against the Soviets.[16] However, Egypt suffered from technological difficulties and a noticeable problem with sustainability. Philip Stoddard, of the Defense Intelligence College, stated, "[m]ilitary sales in 1982 reached $1 billion, making weapons Egypt's second largest source of export revenue after oil. Much of this trade was with Iraq, financed by subsidies from the Gulf states…Whether Egypt will be able to maintain sales at these levels is open to question…much of Egypt's arms industry is in the developing stage…"[17] Likewise, LTC Stephen H. Gotowicki, of the U.S. Army, argued that Egypt's engagement in assembling advanced weaponry with Western producers did not render it technologically

[10] United States General Accounting Office (GAO), *Military Aid to Egypt,* 1–2.

[11] United States General Accounting Office (GAO), *Military Aid to Egypt,* 15.

[12] Jim Paul, "The Egyptian Arms Industry" (MERIP Reports 112, February 1983), 26–8.

[13] LTC Stephen H. Gotowicki (U.S. Army), "The Role of the Egyptian Military in Domestic Society," Published at DoD's Foreign Military Studies Office (FMSO), National Defense University, 1997, accessed 29 August 2011, http://fmso.leavenworth.army.mil/documents/egypt/egypt.htm.

[14] Stork, "Arms Industries of the Middle East," 12–6.

[15] "Egypt Wins Right to Export Arms to the U.S.," *New York Times,* March 24, 1988.

[16] See Joe Stork and James Paul, "Arms Sales and Militarizing the Middle East," MERIP 112 February 1983), 5–15.

[17] Philip H. Stoddard, "Egypt and the Iran–Iraq War," in *Gulf Security and the Iran–Iraq War,* edited by Thomas Naff (Washington, D.C.: National Defense University Press, 1985), 36–7.

capable. "The Egyptians receive kits for assembly, but the technology involved is closely maintained by the Western partner."[18] Regarding U.S. technology in particular, Ralph Sanders, professor at the National Defense University, asserted that buyers of American arms generally enjoyed trivial access to the technology to help with independently manufacturing them.[19]

By the end of the 1980s, Egypt reduced spending on military industries once more because of budget constraints. The industry needed around $4-6 billion to properly develop. For example, a report by the EU's Institute for Security Studies states, "The development of the Sakr-80 missile for instance cost $100 million in R&D. As a result of these resource constraints, Egypt was not able to provide seed money or investment capital for new ventures. It also had to limit its projects of production under license, thereby hindering its acquisition of skills and know-how. Lastly, lack of funds stood not only in the way of the development of a national arms industry. It also affected existing projects as they were either cancelled (such as the Lynx helicopter programme) or delayed."[20]

Therefore, by the early 1990s, lack of technology and budgetary problems led to a state decision to convert considerable parts of the arms production lines into civilian manufacturing. The Egyptian defense industry witnessed a period of drastic decline in the following three decades, but the military institution managed to generate immense profit through creating a business empire of civilian enterprises functioning within, or rather above, the domestic market.

3. Defense Conversion and Continuous Dependency (1990s-2000s)

By the end of the 1980s, experts predicted that Egypt's arms production was highly promising and most likely would increase.[21] Unfortunately things went in the opposite direction over the following decade. In the early 1990s, the growing Egyptian arms industry faced an economic crisis, as domestic, regional, and international factors once more pushed it toward defense conversion to the production of civilian goods. It embarked on a process of massively transforming much of its military production lines to serve the civilian market and generate profits locally. Meanwhile, Egypt continued to be almost fully dependent on the U.S. for procurement, through the annual military aid package. Egypt's only significant co-production project remained to be that of General Dynamics' M1A1.

In fact, the army's business activities in the civilian market had already started in the 1980s under Abu Ghazala. Upon signing the peace treaty with Israel in 1979, the Egyptian military created an economic entity called the National Service Projects Organization (NSPO) to establish business enterprises and assimilate the efforts of officers and conscripts alike into them. The NSPO continued to rapidly expand its profitable economic endeavors through the 1990s, but it was no longer the only military body doing so. Military factories that had formerly produced ordnance such as ammunitions, missiles, aircrafts, rockets, explosives, pistols, and armors, were now heavily utilizing their facilities and labor to produce consumer

[18] Gotowicki, "The Role of the Egyptian Military in Domestic Society".

[19] Ralph Sanders, "Arms Industries: New Supplies and Regional Security [National Security Implications]," *The DISAM Journal* 13 (Winter 1990/1991): 105.

[20] Florence Gaub and Zoe Stanley-Lockman, "Defence Industries in the Arab States: Players and Strategies," (European Union Institute for Security Studies, Chaillot Papers, March 2017), 16.

[21] See Yezid Sayigh, *Arab Military Industry: Capability, Performance, and Impact* (London: Brassey's: Putnam Aeronautical 1992), 45.

goods such as washing machines, refrigerators, TVs, kitchenware, fertilizers, and more.[22]

In 1991 in particular, defense conversion was inevitable in Egypt. This year marked the eruption of the Gulf War in the immediate aftermath of the Cold War, which negatively affected the country's arms sales and consequently its manufacturing programs. At the regional level, Egypt's defense industry lost its existing and future market in Iraq as well as the U.S.-backed Arab Gulf states, and its arms sales in this area plummeted. This market was not only closed because of the end of the Iraq-Iran war in 1988, [23] but also due to the sanctions imposed on Saddam Hussein during the 1990s after his invasion of Kuwait and defeat by the U.S.-led operation to liberate this small oil-producing country. The end of another long-standing Cold-War dispute, the Afghan war, similarly closed a considerable market for Egyptian arms sales to the jihadists.[24] Furthermore, oil producing Arab Gulf states that had been current or prospective customers of Egyptian arms sales now switched directly to the most advanced producer, the U.S., which had militarily saved them during the crisis of Iraq's invasion of Kuwait. The U.S. sold its regional clients an ever-increasing amount of ordnance over the following two decades.

> More important, right after the end of the Gulf War, the George H. W. Bush Administration took serious steps to restrict weapons production in the Middle East, by introducing an "arms control initiative" restraining technology transfer of non-conventional and conventional weapons to the region. A report published by the Congressional Research Service (CRS) in May 1991, titled "Middle East Arms Control and Related Issues," highlighted the expansion of Egypt's defense industry. It states that,

Egypt has a rapidly growing military industrial sector. It has cooperative ventures with several countries... Egypt produces jet trainers of French design and Brazilian design and helicopters designed by French, British, and Italian firms. Small arms, machine-guns, motors, recoilless weapons, rocket launchers, artillery and electronic equipment produced by Egypt were designed in the Soviet Union, Sweden, Czechoslovakia, and Italy. Argentina and Italy cooperated on the development of the Condor II surface-to-surface missile until the project was terminated under U.S. pressure.[25]

At the end of the same month that this report appeared, President Bush issued the "White House Fact Sheet on the Middle East Arms Control Initiative" seeking "to restrain destabilizing conventional arms build-ups in the region…The initiative calls on the five major suppliers of conventional arms to meet at senior levels in the near future…"[26] The U.S. later even considered breaking its already existing agreements of co-production of M1A1 with Egypt.[27]

Now that Egypt's old ambitions to build a large military industry targeting global markets were no longer feasible, mass defense conversion began. At this point of the early 1990s, Egypt had at least 25 publicly known military factories: 16 functioned under MoMP and nine under AOI. They were mostly built between the 1950s and 1970s, and were geographically

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[22] See Abul-Magd, *Militarizing the Nation,* 78–111.

[23] Business Monitor International Ltd, "Egypt Defence and Security Report," Quarter 4, Issue 4 (2011): 59.

[24] Stark, "Arms Industries of the Middle East," 14.

[25] *Middle East Arms Control and Related Issues,* Foreign Affairs and National Defense Division, CRS Report No: 91-384F (Washington D.C.: Congressional Research Service, May 1, 1991), 14.

[26] "White House Fact Sheet on the Middle East Arms Control Initiative," May 29, 1991, accessed April 24, 2016, http://www.presidency.ucsb.edu/ws/?pid=19637, 579–80.

[27] United States General Accounting Office (GAO), *Military Aid to Egypt: Tank Coproduction Raised Costs and May Not Meet Many Program Goals,* GAO/NSIAD-93-203 (Washington, D.C., July 27, 1993), 3.

concentrated in limited areas—especially in Helwan in the south of Cairo, Abu Za'bal in the north of Cairo, and on the Cairo-Suez road. By 2010, 40 percent of the MoMP's production turned civilian, and the remaining 60 percent still military.[28] The situation was more drastic at the AOI. By 2009, 70 percent of the AOI's outcome became civilian, with only 30 percent still military.[29]

For example, the MoMP's Helwan Company for Engineering Industries, also known as Factory 99, was one of the large plants that went through this conversion process. For more than three decades since it was built in 1958, Factory 99 specialized in manufacturing casings for various sorts of ammunition, including anti-armor warheads, runaway bombs, and artillery rockets. It switched to producing completely different consumer and non-consumer goods: stainless steel tableware and kitchenware, fire extinguishers, gas regulators, and auto parts such engines and bumpers. Also, for more than three decades since it was built in 1954, the MoMP's Shubra for Engineering Industries Company, known as Factory 27, produced small arms ammunition. It shifted to manufacturing electric engines to use in assembling consumer goods such as electric fans and washing machines. The Helwan Metal Devices Company, or Factory 360, built in 1964, began by producing sheet metal used in the construction of trenches and making mines sapper charges. It switched to manufacturing washing machines and other home appliances, such as refrigerators, freezers, air conditioners, water heaters, and gas ovens. Furthermore, the Heliopolis Chemical Industries Company, factory 81, once manufactured ammunition for anti-aircraft guns and developed long-range bombardment rockets. It transitioned into non-military goods such as paints and raw rubber for car tires.[30]

At the AOI, the Arab British Dynamics Company used to produce guided missiles with an English partner—British Aerospace Dynamics. In 1998, the company faced a crisis with the withdrawal of the British co-producer, leaving it with no sources of advanced technology. It reduced its activities to only installing missile launchers on jeeps. In addition, it shifted to manufacturing tobacco producing machines, auto parts, gas stopcocks, medical equipment, industrial burners for bakeries, and furnaces. Another instance at the AOI is the Sakr Factory, which originally produced artillery rockets, light guided missiles, and grenades. It switched to manufacturing water storage plants, large electronic monitors for stadiums and advertisement boards, loaders, minibuses, agricultural and irrigation machines, and different sorts of trucks for sewer cleaning, water carrying, and postal services. The AOI's Aircraft Factory originally assembled and produced aircrafts, and had to diversify to produce ambulances, garbage recycling machines, and treatment plants for sewage, potable water, and industrial drainage. It also produced furnished trucks transporting vaccines and medical waste. The Electronics Factory that originally specialized in avionics, such as producing aircraft communications systems and radar, now shifted to producing TVs, personal computers, digital satellite receivers, telephone switching systems, photocopiers, and printers.[31]

The hasty conversion process suffered from a noticeable lack of institutional planning,

[28] Ibtisam Ta'lab, "Dr. Sayyid Mash'al Wazir al-Intaj al-Harbi li-l-Masry al-Yuom (2-2)," *al-Masry al-Youm,* September 15, 2010.

[29] Ahmad Abd al-'Azim, "al-Fariq Hamdi Wahiba- Ra'is al-Hay'a al-'Arabiyya li-l-Tasni'- fi Hiwar ma'a Ruz al-Yusuf," *Ruz al-Yusuf,* November 3, 2009.

[30] Sayigh, *Arab Military Industry,* 55–7. The official website of MoMP, accessed January 15, 2014, http://www.momp.gov.eg/Ar/Facts.aspx.

[31] Sayigh, *Arab Military Industry,* 57–60; Website of AOI, accessed January 15, 2014, http://www.aoi.com.eg/aoiarab/factories/abdinfo.html; http://www.aoi.com.eg/aoiarab/factories/acfinfo.html; http://www.aoi.com.eg/aoiarab/factories/sakrinfo.html.

so various corps duplicated the production of the exact same goods without taking into consideration the prospect of competing with each other over the same local market. Several of the factories of the MoMP and AOI copied each other's work, and they both copied NSPO's products. The most striking example is the number of factories that manufactured water and sewage sanitation plants. Military Factories 10 and 270, the AOI's Engine Factory, and the Aircraft factory all assembled similar systems mainly to sell to government projects. Another example is in the chemicals sector. While the NSPO had a large chemicals complex geared for civilian production, the MoMP had three chemicals plants (Factories 18, 81, and 270) engaged in overlapping activities. Moreover, the Chemical Warfare Department produced pesticides, drugs, detergents, and vinegar—copying the goods of the NSPO's chemicals complex. The Supply Authority also produced drugs—duplicating the work of the latter two. In addition, many converted industries produced vehicles and trucks of various forms, including Factory 200, the Sakr Factory, and the Aircraft Factory. Both Banha for Electronic Industries, or Factory 144, and the AOI's Electronics Factory produced TVs, personal computers, and satellite receivers. Many enterprises overlapped in manufacturing kitchenware, home appliances, furniture, irrigation equipment, sports equipment, and garbage recycling systems. The Department of Weapons and Ammunition produced sports equipment, which military Factories 54 and 999 already produced. Outside factories in the field of commercial agriculture, the NSPO's large commercial farms yielded processed food, and so did the Third Army's farms.[32]

Switching from military to civilian production took place within a pervasive milieu of transforming Egypt into a market economy. Upon the collapse of the Soviet Union, Egypt among other previously socialist regimes faced U.S. pressure to transform into a free-market economy—neoliberalism. In 1991, Egypt concluded U.S.-backed agreements with the IMF and the World Bank to apply an Economic reform and Structural Adjustment program. One of the cornerstones of this program was the reduction of fiscal deficit through significant cuts in public spending.[33] Amidst swiftly applying these market measures, the Egyptian defense industry was hurt in some areas, but benefited in many others. Mending the budget deficit entailed cuts in military expenditure as a considerable part of public spending. The Military budget drastically dropped in the early 1990s.[34] Nevertheless, the regime compensated the military for these budget losses by allowing it to expand its civilian production activities, initially by converting large parts of the defense industry and later by creating new business ventures. Military factories not only weathered all waves of privatization and maintained their subsidies and privileges intact, but they also expanded further. By the end of the 1990s, military industries employed about 200,000 workers.[35]

While Egypt undertook these transformations, i.e., neoliberal transition moving hand in hand with defense conversion, there was an ongoing global wave of similar changes in many other states that once aligned with the Soviets. The end of the Cold War rendered the American economic system a global model for all former socialist and post-communist

[32] See Abul-Magd, *Militarizing the Nation,* 112–51.

[33] See Karima Korayem, *Egypt's Economic Reform and Structural Adjustment* (Cairo: Egyptian Center for Economic Studies, 1997); Dieter Weiss and Ulrich Wurzel, *The Economics and Politics of Transition to an Open Market Economy: Egypt* (Paris: OECD, 1998), 44–51.

[34] See Abul-Magd, *Militarizing the Nation,* 112–51; Tables, 251–52.

[35] Jamal Mazlum, *al-Quwwat al-Musallaha wa-l-Tanmiya al-Iqtisadiyya* (Cairo: Markaz Dirasat wa-Buhuth al-Duwal al-Namiya, 1999), 106.

states to follow. Economic liberalization measures that regimes transitioning into the market economy applied required substantial cuts in public spending, including in military budgets. Many of these regimes allowed their military institutions to create business enterprises that compensated for their financial losses, most especially in order to avoid officers' mutinies or potential coups d'état. The phenomenon of military business, or "Milbus" as Jörn Brömmelhörster and Wolf-Christian Paes refer to it, emerged when the IMF and the World Bank pushed governments transforming to neoliberalism to adopt more conservative fiscal policies. In order to coup-proof their regimes, these governments hid military expenditures in "a complex web of budgetary and off-budgetary transactions, often incorporating elements of military business."[36] This generated the global phenomenon of "Milbus" in many places, including Russia, China, Indonesia, and Pakistan all the way to Argentina, Guatemala, Costa Rica, and Panama.[37]

Evidently, undertaking defense conversion in a neoliberal milieu led to failure in achieving its manifest goal: making armies help with national economic development. On the contrary, the experiences of many states show that conversion while transitioning to the market economy made armies a burden on the economy rather than a fair competitor in and contributor to it. This is due to the extensive privileges they receive from their regimes at the expense of public and private businesses. According to free-market theoretical assumptions, defense conversion should take place smoothly and efficiently with little state intervention: the market should fix any problems that might occur during the process. Nevertheless, many theorists debunk this assumption and insist that centralized planning is essentially needed, at least because of the very nature of military business that resents abiding by the rules of a free market and superiorly acts beyond them.[38] Probably Russia presents the most conspicuous example of defense conversion that went wrong because it took place while applying economic reform, whereas China presents an opposite case where the process succeeded because it occurred under heavy government planning. Unfortunately, the 1990s Egyptian experience was closer to the Russian model, and thus came out inefficient.[39]

During the 2000s, the Egyptian military business embarked on a new stage of substantial expansion in its economic activities. This was when the ambitious elder son of President Mubarak, Gamal, delved into the political and economic scene with an apparent scheme to inherent his father's presidential seat. Gamal Mubarak accelerated the rate of transitioning to the market— which came at great benefit of the military entrepreneurs. He took over the ruling party by forming the "Politics Committee," whose membership was composed of his close patronage circle of business tycoons and neoliberal minds in the country. From this very circle, a cabinet dominated by private business figures took form in 2004, and remained in office until the 2011 uprisings. This cabinet rapidly privatized more public-sector enterprises, eliminated subsidies, liberalized the agricultural land rents, and reduced spending on public services, among other things. Similarly, the elected parliaments of 2005

[36] Jorn Brommelhorster and Wolf-Christian Paes, eds., *The Military as an Economic Actor: Soldiers in Business* (Basingstoke: Palgrave Macmillan, 2003), 9.

[37] For Milbus cases in the Middle East, in states such as Turkey, Pakistan, Iran, Syria, Yemen, and the Sudan, see Zeinab Abul-Magd and Elke Grawert, *Businessmen in Arms: How the Military and Other Armed Groups Profit in the MENA Region* (New York: Rowman & Littlefield, April 2016).

[38] Seymour Melman and Lloyd Dumas, "Planning for Economic Conversion," *The Nation,* April 16, 1990. Also see Seymour Melman, *The Demilitarized Society: Disarmament and Conversion* (Montreal: Harvest House, 1990).

[39] For the Russian case, see Julian Cooper, "Soviet Military Has a Finger in Every Pie," *The Bulletin of Atomic Scientists* 46 (1990): 22–2. For the Chinese case, see Dongmin Lee, "Swords to Ploughshares: China's Defence Conversion Policy," *Defence Studies* 11 (March 2011): 1–4 and 20.

and 2010 were dominated by Gamal's business cronies and issued laws that contributed to the hastened market transformations. In order to appease the military institution that watchfully witnessed a young civilian approaching the presidential seat—which had been occupied by only officers ever since 1952— Mubarak allowed the army to extensively expand their civilian enterprises.[40]

Within this domestic milieu, the military seized many public-sector enterprises that were up for sale and transferred their ownership to the various military entities. Because advanced technology was indispensable in old and new ventures, the officers partnered with American, German, Chinese, French, Eastern European, Japanese, and more firms now entering the open market. With them, the military invested in new heavy industries, such as railway wagons, luxury cars, ships, steel, cement, etc. Military business continued to enjoy various forms of tax and customs breaks. When the country's stock market was reactivated and both private and public enterprises became listed, none of the military companies registered themselves—the officers maintained full lack of transparency about their capital and annual revenue, and sought to avoid having stockholders to share their firms with.[41]

For example, the AOI seized the only state-owned manufacturing plant of railway wagons in the country when it was privatized in 2004, and thus established a monopoly over this sector. With a long career and good connections with global technology, SEMAF was founded as a public-sector company in 1955. In 1986, SEMAF entered into a joint venture with a French rail group to introduce the first fleet of underground metro cars to the long waiting inhabitants of crowded Cairo.[42] Taking advantage of the extended wave of privatization, the AOI "annexed" SEMAF – located in Helwan near many other factories of the AOI— with its more than 1400 workers. The plant carried on with manufacturing train and underground wagons for its new military owner, which made deals worth billions of Egyptian pounds and presented overhauling services to the government.[43]

In another incident of the military seizing vital state-owned enterprises that were supposed to be privatized, the military appropriated several maritime and river transport companies. In 2003, the MoD created a new organization called the Maritime Industries and Services Organization (MISO), as a corporation enjoying its own legal entity. MIOS immediately took over three gigantic public sector firms: the Egyptian Company for Ship Repairs and Building, the Alexandria Shipyard, and the Nile Company for River Transport—in 2003, 2007, and 2008 respectively. Moreover, MISO created another new venture, Triumph for Maritime Transport, in 2009. Needless to say, ex-navy officers head the organization and its subsidiaries. The property rights of the Alexandria Shipyard were "transferred" from the state to MISO.[44] When the organization appropriated the Nile Company for River Transport from its mother state-owned holding company, the head of the latter was another former navy

[40] See Holger Albrecht, "Does Coup-Proofing Work? Political-Military Relations in Authoritarian Regimes Amid the Arab Uprisings," *Mediterranean Politics* 20 (2015), 39; Abul-Magd, *Militarizing the Nation,* 112–51.

[41] See Abul-Magd, *Militarizing the Nation,* 112–51.

[42] Paul Betts, "French Rail Group Awarded Cairo order," *Financial Times,* January 7¸1986.

[43] See the factory's official website, accessed January 15, 2014, http://www.aoi.com.eg/aoiarab/aoi/semaf/pages/AboutA.html; Abd al-Fattah Ibrahim, "800 'Arabat Qitar Jadida bi-'Istithmarat 1.5 Milyar Junayh," *al-Ahram,* May 26, 2004.

[44] Muhammad Amin, "al-Liwa' Bahari Ibrahim Jabir al-Dusuqi: Hadafuna Tatwir wa-Raf` Kafa'at Tirsanat al-Iskandariyya," *Uktubar*, January 23, 2011.

officer.[45] MIOS fostered good ties with Chinese, Eastern European, French, and local firms.[46]

Moreover, the military ventured into the manufacturing of a crucially resource: steel making.[47] In 2005, the MoMP finished the construction of a large steel rolling plant as part of military Factory 100.[48] Also known as the Abu Za'bal Company for Engineering Industries, Factory 100 was established in 1974 and originally produced ordnance such as anti-aircraft, tube artillery, and tank guns.[49] The attached gigantic steel plant needed large capital in order to acquire Western technology and expertise, which the regime made available to the military. The MoMP invested LE1.5 billion in this mill, in collaboration with a German company, SMS Siemag, and other global steelmakers.[50] As usual, this new venture enjoyed advantageous tax breaks: the minister of military production insured that his projects in steel and other sectors were exempt from customs or pay very little duties.[51] Another NSPO company benefited from the venture by feeding the mill with needed iron scrap, particularly the NSOP's Queen Service company which was active in scrap trading.[52]

In another sector of production of strategic goods, the NSPO invested in a large cement plant. It created Arish Cement Factory in North Sinai in 2010.[53] The brand-new facility was erected on an appropriated piece of state land, around 210 acres, in addition to seizing hundreds of other acres of surrounding quarries to feed it with raw material, and more land to construct roads connecting the plant to those quarries. This time, the military chose to collaborate with a non-Western partner to obtain technology and construct the facility: a Chinese state-owned company, and the MoD footed a bill of $370 million in total cost. According to a company statement, Sinoma Group was the first incident of a Chinese contractor working in Egypt's construction sector. The plant has about 800 workers—all civilians except for the top managers who are generals; many of them traveled to China to receive professional training.[54]

These are only a few examples from the civilian business empire that the Egyptian

[45] "Bay' Sharikat al-Nil li-l-Naql al-Nahri ila Jihaz al-Sina'at al-Bahriyya," *al-Ahram,* October 3, 2008; "Wazarat al-Difa' wa-l-Intaj al-Harbi. Qarar Raqam 3 li-Sanat 2010 bi-Sha'n Insha' Sharikat al-Nil lil-Naql al-Nahri," *al-Waqa'i' al-Rasmiyya* 66, year 182, March 21, 2010.

[46] Du'a' Najib and Ahmad al-Dimirdash, "al-Intiha' min Tatwir Tirsanat al-Iskandariyya," *Amwal al-Ghadd,* March 18, 2013; Alexandria Shipyard's website, accessed April 15, 2014, http://www.alexyard.com.eg/ar%20first%20stage.html; Mamduh Sha'ban and Jamal al-Khuli, "Tirsanat al-Iskandariyya Tahtafil bi-Tadshin 'al-Huriyya 3'," *al-Ahram,* December 28, 2010; Rubban Muhammad Bahyy al-Dina Mandur, "Takhalluf Sina'at Bina' Sufun A'ali al-Bihar fi Misr," *International* (London) n. d., accessed April 15, 2014, http://www.international-mag.com/index.php?option=com_content&view=article&id=651:2011-12-11-12-50-20&catid=37:getaways&Itemid=532; Website of Chinese company, indicating sources of technology, accessed April 15, 2014, http://www.cstc.com.cn; Muhammad Amin, "al-Liwa' Bahari Ibrahim Jabir al-Dusuqi: Hadafuna Tatwir wa-Raf` Kafa'at Tirsanat al-Iskandariyya, " *Masress*, January 23, 2011, accessed 15 April 2014, http://www.masress.com/october/110405.

The name of the French company is Bureau Veritas. "Alexandria Shipyard, Acquired Earlier by the Military Production Sector, Delivering Two Large Sized Barges, part of a L.E. Billion Order for 16 Barges Issued by Citadel Group's Affiliate Handling Land River Transport Investments at Home," *AmCham Egypt Project News*, August 10, 2010.

[47] See official website of this company, accessed April 15, 2014, http://www.ezzsteel.com/main.asp?pageid=119.

[48] 'Usama 'Abd al-'Aziz and Mukhtar Shu'ayb, "al-Ra'is Yaftatih Masna' Darfalat al-Sulb al-Makhsus al-Tabi' li-Wazart al-'Intaj al-Harbi bi-Abu Za'bal," *al-Ahram*, December 7, 2005.

[49] Saygh, *Arab Military Industry,* 54.

[50] "Mash'al: Mashru' 'Imlaq li-'Intaj wa-Darfalat al-Sulb," *al-Ahram,* March 16, 2004; Mamduh Sha'ban, "Ba'd Najah 'Intaj 'Awwal Lawh min al-Sulb bi-l-Darfala, Mash'al: al-'Intaj al-Harbi Yusahim fi Tatwir al-Sina'at al-Thaqila," *al-Ahram,* September 23, 2005; 'Abd al-'Aziz and Shu'ayb, "al-Ra'is Yaftatih Masna' Darfalat al-Sulb al-Makhsus".

[51] Minister Ali Sbri stated this in an interview in March 2012. Zeinab Abul-Magd, "Siyadat al-Liwa' Sayuqatil al-Sha'b," *al-Masry al-Youm,* April 3, 2012.

[52] See the company's website, accessed April 13, 2014, http://queenservicealex.blogspot.com.

[53] *Al-Waqa'i' al-Misriyya,* no. 160, year 183, July 12, 2010.

[54] Dalia 'Uthman, "al-Mushir Yaftatih Masna' 'Asmant al-'Arish," *al-Masry al-Youm,* May 1, 2012; Amira Ibrahim, "al-Mushir Yaftatih 'Awwal Masna' Asmant 'Asakari bi-Taqat 3.2 Tann Sanawiyyan bi-Taklufa 174 Milyun Yuru," *al-Dostor al-Asly,* April 30, 2012; Sinoma, "Kiln inlet steel tower of GOE Project Line 1 in Egypt contracted by TCDRI installed," accessed April 13, 2014, http://en.sinoma.cn/news/ShowArticle.asp?ArticleID=989. The Chinese company's name is TCDRI, part off state-owned Sinoma Group, and its website, accessed April 13, 2014, http://www.tcdri.com.cn/english/intro.asp.

military expanded before the 2011 uprisings. One of the most frequently asked questions about the military business empire in Egypt is its exact size: how many enterprises developed, how much profit they generate annually, and their proportion of the national economy. Because military enterprises are untaxed and unaudited by either the parliament or public accountability agencies, and they are not even listed in the stock market with publicly open company profiles, it is almost impossible to estimate their precise number and gain access to their annual profit. Robert Springborg estimates their size from anywhere between 5 and 40 percent of the country's economy and asserts that they make billions of dollars.[55] Economist Ahmed al-El-Naggar calculated them at only 1.8 percent in 2013. The ex-minister of defense and current military president, Abdel Fattah Al-Sisi, also presented an estimate, asserting that they made up only 2 percent of the national economy in 2014.[56] Whereas high estimates take into consideration the military formal and informal control over state land and other public construction and service sectors, the lower estimates mostly depend on materially counting the visible commercial facilities they own.

After a new military president took back full power in 2014, this empire was conspicuously further extended into old and new sectors of manufacturing and services. In the meantime, the new military regime faced a crisis that pressured it to give attention back to its long-neglected defense industry.

4. Attempts at Autonomy: Diversification and Co-Production (2013-2018)

In 2013, a crisis with U.S. military aid forced Egypt to make serious attempts to diversify its sources of procurement and increase recent co-production initiatives. In the summer of that year, then minister of defense, al-Sisi, relied on widespread mass protests to overthrow the Islamist president and subsequently formed an interim government. In summer 2014, al-Sisi swept the presidential election and assumed full power. As a result, the Obama administration informally perceived the events as a military coup and suspended U.S. arms shipments due to Egypt as part of its aid package for two years, until 2015. Such an act placed pressure on the Egyptian military to limit its dependency on U.S. arms by diversifying and seeking new co-production agreements with non-American firms, namely European companies in states that were willing to collaborate with the ex-general. In addition, a war on terrorist groups that proliferated in the country upon deposing the Islamist president, especially the Islamic State in Iraq and the Levant (known as ISIL or ISIS) in the Sinai Peninsula, and their repeated attacks across the country further pressured the military to diversify and co-produce new weapon systems. Regional actors in support of Islamists that posed a military threat to the Egyptian regime, especially Turkey and Qatar, contributed to such pressure. Meanwhile, other regional actors, especially the UAE and Saudi Arabia, financially backed al-Sisi's military endeavors towards reduced dependency on the U.S.

For around a decade before this crisis and under President Mubarak, Egypt had already ventured into new initiatives towards co-production away from the U.S. According to Shana Marshall, Egyptian military industries sought partnership with "second and third-tier" international defense manufacturers, but at a limited scale in comparison to the large number of licenses that were successfully acquired in the1980s. Marshall argues that the Egyptian defense producers, hoping for reduced reliance on U.S. firms, attempted to form ties with

[55] Alex Blumberg, "Why Egypt's Military Cares about Home Appliances," *NPR*, February 4, 2011.
[56] "Nass Muqabalat Reuters ma'a al-Sisi," *Reuters*, May 15, 2014.

lesser-ranked or smaller manufacturers and engage in small-scale projects with them with a goal of technology transfer.[57]

Marshall indicates that Egypt's new co-production partners then were subsidiaries or small independent suppliers that benefitted from sales contracts with a country in desperate need for access to technology. Such efforts were largely concentrated in the "Mubarak Complex for the Defense Industry," constructed primarily to provide new facilities to old military factories in the outskirts of the densely populated Cairo. According to Marshall, contracts concluded with foreign firms included, for example, the production of,

> [A] waterjet-powered fire-fighting vessel (with 4X4 vehicle deployment ramp) built in 2004…based on design technology and materials provided by Teknicraft Design (of New Zealand) and the local Egyptian agent of Hamiltonjet (also of New Zealand)…The website of an Egyptian consulting firm revealed that it had worked on another product development plan, this one encompassing the military-owned firms Arab International Optronics and Benha Electronics Factory, along with Motorola and the French defense firms Thales (which owns half of Arab International Optronics) and Thomson CSF.[58]

Meanwhile, the Egyptian military was far from terminating its dependency on the U.S. The MoMP continued to co-produce M1A1 with General Dynamics, and aimed at increasing its share in manufacturing the tank from 80 to 90 percent. Other projects with American firms that were closely tied to this tank's production with other major manufacturers needed to continue. Marshall indicates that they included "a 2005 agreement with United Technologies to co-produce M88A2 tank recovery vehicles, and a twenty million US dollar contract signed with Oshkosh Defense in 2009 to co-produce the M1070 tank transport and refueling vehicle."[59]

More importantly, Egypt continued to receive U.S. military aid, at the considerable annual amount of around $1.3 billion. This was in the form of financing arms sales from U.S. firms to Egypt. For the previous three decades, Egypt traditionally used this grant to purchase "large-scale conventional military equipment" from major American defense manufacturers. On the eve of the 2013 crisis, the list of U.S. companies that supplied Egypt included Lockheed Martin, Boeing, DRS Technologies, L3 Communications, Boeing, Raytheon, AgustaWestland, US Motor Works, Goodrich and Columbia Group.[60] According to a Congressional Research Service report, the Obama Administration shifted this tradition by announcing that "grants may only be used to purchase equipment specifically for 'counterterrorism, border security, Sinai security, and maritime security' (and for sustainment of weapons systems already in Egypt's arsenal)."[61]

Up until 2013, most of Egypt's procurement came primarily from U.S. firms except for a small portion from European manufacturers. These purchases included vehicles from AM General; Apache AH-64D from Boeing; CS gas allegedly used in Tahrir from Combined Company; M1A1from General Dynamics; F-16C/D from Lockheed Martin; and Black Hawk aircraft from Sikorsky (UTC). Aside from this, Egypt received sales from the British multinational BAE Systems of aircraft KF-16 C/D; airbuses from the joint German-French

[57] Shana Marshall, "Egypt's Other Revolution: Modernizing the Military-Industrial Complex," *Pambazuka News,* February 16, 2012. https://www.pambazuka.org/governance/egypts-other-revolution-modernizing-military-industrial-complex

[58] Marshall, "Egypt's Other Revolution".

[59] Marshall, "Egypt's Other Revolution".

[60] "10 U.S. Companies Profiting Most from U.S. Military Aid to Egypt," *Huffington Post,* August 22, 2013.

[61] Jeremy M. Sharp, *Egypt: Background and U.S. Relations,* CRS Report No: RL33003 (Washington, DC: Congressional Research Service, March 24, 2017), 22.

company EADS; and a joint Turkish-British BAE System project of tracked and wheeled armored combat vehicles.[62]

Three weeks after the al-Sisi-led coalition overthrew the Islamist president, the Pentagon suspended a shipment of 12 Lockheed Martin's F-16 fighter jets to Egypt, probably for the first time since Egypt started to receive an annually fixed military aid package three decades earlier after signing the peace treaty with Israel. This was followed by freezing the shipment of 20 Boeing Harpoon missiles and around 125 M1A1 Abrams tank kits. Furthermore, the "Bright Star" routine mutual exercise between the Egyptian and U.S. armies was cancelled. However, the U.S. decided in 2014 to deliver ten Apache helicopters "to help combat terrorism, particularly in the Sinai."[63] Suspended supplies were only released about two years later, after al-Sisi was elected president and spent many months in office.[64] During this period, al-Sisi sought procurement elsewhere, especially in Russia. Before he was elected president and in his capacity as minister of defense, Field Marshal al-Sisi visited Vladimir Putin near Moscow to negotiate a $2 billion arms deal. On the same visit, Putin supported al-Sisi's candidacy in the presidential election.[65] The Obama Administration resumed military aid in March 2015, after a visit by U.S. Secretary of State John Kerry to Cairo, during which he attended an international economic conference to support the military regime's economic development plan.[66]

The UK and the EU as a whole similarly suspended arms sales to Egypt after the events of the summer of 2013. The UK revoked arms deals for components of military combat vehicles with Egypt. Like the U.S., the UK resumed those sales in 2015.[67] As for the EU, according to a report published by the Campaign Against Arms Trade (CAAT), it suspended a large number of licenses on the grounds of their potential use in domestic oppression of civilian opposition, but it later allowed some of them to resume provisions. In August of 2013, the EU "suspended 49 existing licenses as well as new license applications for the Egyptian Army, Air Force and Internal Security Forces or Ministry of the Interior until further notice."[68] In October of the same year, the EU completed assessing the situation and declared that,

> 24 licenses would have the suspension lifted as it did not judge the goods might be used for internal repression, seven would be revoked as there was a clear risk that the goods might be used for internal repression, and the remaining 16 would remain suspended because the goods might be used for internal repression.[69]

Therefore, the 2013 crisis stirred the military regime to intensify efforts to diversify suppliers and pursue new co-production contracts. As a result, the last few years, under al-Sisi and with his minister of military production ex-general Mohamed al-Assar, have witnessed renewed and increased attention on the domestic arms industry. Although most of al-Assar's

[62] See Campaign Against Arms Trade (CAAT) page on arms supplies companies to Egypt, pages created August 20, 2013, accessed August 1, 2019, https://www.caat.org.uk/resources/countries/egypt/arms-supplying-companies.

[63] "Midde East and North Africa," *The Military Balance* 115 (2015): 323.

[64] See Zeinab Abul-Magd, "U.S. Military Aid to Egypt Lost Value," *Jadaliyya*, July 25, 2013; Robert Rampton and Arshad Mohammed, "Obama Ends Freeze on U.S. Military Aid to Egypt," *Reuters*, March 31, 2015.

[65] "Egypt's Sissi Negotiates Arms Deal in Russia," *Times of Israel,* February 13, 2014; "KSA, UAE to Finance Russian Arms Deal with Egypt," *Egypt Independent,* February 7, 2014; "Putin Backs Sisi 'Bid for Egypt Presidency'," *BBC*, February 13, 2014.

[66] U.S. Department of State, "Remarks at the Opening Plenary of the Egypt Economic Development Conference. John Kerry, Secretary of State, Sharm el-Sheikh, Egypt, 13 March 2015," accessed October 10, 2015, http://www.state.gov/secretary/remarks/2015/03/238872.htm; Kevin Liptak, "Obama Lifts Freeze, Ships Arms to Egypt," *CNN*, March 31, 2015.

[67] "Britain Quietly Resumes Multi-million Pound Arms Deals with Egypt," *Newsweek*, July 31, 2015.

[68] Campaign Against Arms Trade (CAAT), "Egypt," November 11, 2013, accessed June 10, 2018, https://www.caat.org.uk/resources/countries/egypt.

[69] Campaign Against Arms Trade (CAAT), "Egypt".

activities continue to focus on civilian production, he has initiated some attempts at military co-production with international firms.[70]

In 2017 al-Assar claimed that military manufacturing increased by 230 percent in 2015/2016. Nevertheless, he did not provide specific details about the items produced or the volume of output, insisting that such information constitutes a national security secret and should be kept hidden from the public. He stated that his ministry manages 20 companies, which include 17 factories that engage in military and civilian production, a construction company, and a research center. They employ around 34,500 workers.[71] He affirmed that his ministry plans to focus on efforts of military co-production with international firms instead of importing, and he specified Russian firms in this regard and named UAE as an Arab partner. He also reached out to France, Portugal, Belarus, Croatia, Serbia, and Pakistan to discuss collaboration. Al-Assar asserted that Egypt hoped to rely on manufacturing partnerships with other countries for arms supply as an alternative to imports.[72] However, the results of such numerous talks were not announced nor manifested in actual projects launched on the ground.

There are currently only two publicly known co-production initiatives that Egypt is engaged in—apart from the continuity of the M1A1 tank project with the U.S. The first was contracted in 2014, with the French shipbuilder Naval Group (formerly DCNS) to make the Gowind 2500 corvette, which is considered the most advanced naval technology in France. In 2014, Egypt concluded a contract with the French state-owned firm to purchase four ships, three of which were to be constructed in the Egyptian military-owned Alexandria Shipyard. Technology transfer was included in the procurement agreement, and it was to take place in the military shipyard. In 2016, Egypt received the first ship and gave it the name of "ENS El Fateh." In 2018, Egypt completed the building of the second ship and gave it the name of "ENS Port Said." In mid 2019, it completed and launched another one and called it "al-Moez (981)." In order to provide "in-service support," the Naval Group created an Egyptian subsidiary, Alexandria Naval, to take charge of such tasks.[73]

The second co-production initiative was also contracted in 2014, but with an American partner which meant that it didn't count for attempts at diversifying. It was between the Egyptian Navy and the Louisiana-based firm Swiftships, and the firm indicated that its project does include technology transfer. The transaction, according to the company's webpage, was for:

> [B]uilding up to thirty Patrol Craft in a period of seven years. The shipyard in Egypt was replicated to Swiftships' ISO standards by the company's own Subject Matter Experts (SMEs) specializing in shipbuilding and ship repair. The work was performed by local labor under direct Swiftships-trained Egyptian supervisors and SMEs. The Co-production program allows the EN to train their craftsmen at the Swiftships Academy in Morgan City, Louisiana, to gain in-depth knowledge of the capabilities and quality of the product, while enforcing product quality and management.[74]

[70] See the website of the Ministry of Military Production and its news, accessed June 10, 2018, http://www.momp.gov.eg/Ar/Default.aspx.

[71] Muhammad Hasan and Maha Salim, "Intilaqa Jadidia fi Intaj al-Masani' al-Harbiayya," *al-Ahram,* May 20, 2017; Mahmud al-Badawi, "Wazir al-Intaj al-Harbi: Mustamirrun fi Tasni' al-Asliha…wa-la Nu'lin 'Anha," *al-Watan*, January 24, 2017.

[72] "Wazir al-Intaj al-Harbi al-Misri: al-Tasni' al-Mushtarak Badilan 'An Istirad al-Asliha," *Sputniknews*, December 11, 2017.

[73] "Middle East and North Africa," *The Military Balance* 117 (2017): 361; "Egypt receives first Gowind 2500 Corvette from France," https://www.egypttoday.com/Article/1/24042/Egypt-receives-first-Gowind-2500-Corvette-from-France, accessed July 17, 2019; "Egypt Launches First Locally Built Gowind Corvette," https://www.egyptdefenceexpo.com/news/egypt-launches-first-locally-built-gowind-corvette, accessed July 17, 2019.

[74] "Swiftships offers its international clients the opportunity to build its own vessels under the Co-Production Program," http://swiftships.com/services/co-production/, accessed June 10, 2018.

However, Egypt continues to heavily rely on arms imports much more than its own production. It purchased items from European states that were willing to deal with the new military president for mutual interests— based on counterterrorism efforts and for benefiting their national manufacturers. It concluded especially large deals with France and Russia, with Germany coming in third. According to the Stockholm International Peace Research Institute (SIPRI)'s 2016 report of "Trends in International Arms Transfers," Egypt was the eleventh largest importer of major weapons globally between 2012 and 2016. The World Bank's aggregates indicate that these imports tripled after the 2013 wave of terrorism and the need to contain ISIL in Sinai. They increased from $630,000,000 in 2011; $675,000,000 in 2013; to $1,483,000,000 in 2016. This marked a 69 percent increase in recent years. France alone was the source of 40 percent of the country's imports—an equal parentage to that of the U.S. at the time. Egypt is currently the largest client of France with deals worth billions of Euros for fighter jets and warships. It has also signed many large arms deals with Russia, including contracts for 50 combat aircraft and 46 combat helicopters. Germany "quintupled" its arms sales to Egypt and Saudi Arabia—a main regional backer of al-Sisi—with deals worth hundreds of millions of Euros.[75] The UK resumed much smaller arms deals worth around only £48.8 million in 2015. It was anticipated that China might become one of Egypt's suppliers away from the U.S., but it did not because Egypt continued to prefer Western suppliers. China tried to compete with Germany and offered two cheaper submarines in 2015, but the deal didn't work out. Egypt purchased the German submarines instead.[76]

Egyptian imports tremendously increased again in the following year. According to SIPRI's latest report "Trends in International Arms Transfer" of 2017, Egypt jumped into the ranking of the third largest importer of weapons globally during the last five years. Egyptian imports increased by 4.5%, and it came third after India (12%) and Saudi Arabia (10%). France replaced the U.S. as the largest exporter of weapons to Egypt. Between 2008 and 2012, the U.S. was the main supplier with around 45% of Egyptian imports. Between 2013 and 2017, France took this place by providing Egypt with 37% of its procurement.[77]

Thus, since 2013 France has been by far the largest supplier to Egypt, after the sale of the 24 Rafale aircraft manufactured by Dassault Aviation, followed by the Mistral warship manufactured by Naval Group (these are in addition to the above mentioned four corvettes Gowind for co-production). The French government lent Egypt a loan of 3.2 billion Euros to conclude the Rafale contract in 2015, and oil-producing Gulf states that are close allies of al-Sisi helped fund the deal.[78] Al-Sisi visited Paris in late 2017 and was received by the newly elected president, Emanuel Macron. As journalist Jenna Le Bras explained in a report

[75] World Bank, "Arms Importers (SIPRI trend indicator value)." https://data.worldbank.org/indicator/MS.MIL.MPRT.KD?end=2016&start=2011&year_high_desc=true, accessed June 10, 2018; Aude Fleurant, Pieter D. Wezman, Siemon T. Wezeman, and Nan Tian, "Trends in International Arms Transfers, 2016," (Stockholm International Peace Research Institute (SIPRI), Sweden, February, 2017), 6 and 11; Ben Knight, "Germany quintuples arms sales to Saudi Arabia and Egypt," *Deutsche Welle,* November 14, 2017.

[76] See Campaign Against Arms Trade (CAAT), "Egypt in the News," accessed June 10, 2018, https://www.caat.org.uk/resources/countries/egypt/news; Emir Nader, "UK Arms Deals with Egypt Soar Amid Warming Diplomatic Ties," *Daily News Egypt,* August 1, 2015; Siva Govindasamy and Ahmed Mohamed Hassan, "China Tries Trying to Undercut Germany on Submarine Offer to Egypt," *Reuters*, September 15, 2015.

[77] Pieter D. Wezeman, Aude Fleurant, Alexandra Kuimova, Nan Tian and Siemon T. Wezeman, "Trends in International Arms Transfers, 2017," (Stockholm International Peace Research Institute (SIPRI), Sweden, March 2018); "Ma'had Stockholm li-l-Salam: Misr Thalith Akbar Muswarid Silah fi al-'Aalam bi Ziyada %225 Khilal Khams Sanawat," *Mada Masr,* March 14, 2018.

[78] "3.2 Billion Euros of Egypt-French Arms Deal Financed by Loan from Paris: Sisi," Reuters, March 1, 2015; Michel Cabirol, "Egypte: douze Rafale cloués au sol par Bercy," *La Tribune,* October 23, 2017; "Middle East and North Africa," *The Military Balance* 116 (2016): 316.

published at the Cairo-based *Mada Masr*,

> The relationship between the two countries in recent years has centered on military and security cooperation and counterterrorism, while France has turned a blind eye to Egypt's worrying human rights record. Macron defended this position during Sisi's visit, saying it is not his place to 'lecture' Egypt on civil liberties."[79] The agreement of the Mistral helicopter carrier, manufactured by French shipbuilder DCNS, cost Egypt about $1 billion.[80] By the end of 2017, France expressed an interest to sell Egypt "A400M air-lifters and 36 NH90 helicopters, of which 24 would be land-use Tactical Troop Transports (TTH) and 12 NATO Frigate Helicopter (NFH) for maritime operations.[81]

Oil-producing Arab Gulf states supported other Egyptian deals, besides the abovementioned French Rafale. Saudi Arabia and the UAE are the two main backers of Egypt in this realm. The Gulf Cooperation Council (GCC) announced in 2015 that it was establishing "an armed-forces commission" to provide financial and military aid to counterterrorism activities in Egypt and other Arab countries.[82]

While Egypt intensified its arms importation or co-production activities, it has been entangled in domestic and regional conflicts under al-Sisi. The Egyptian army is engaged in Sinai with ISIL; in Yemen together with Saudi Arabia and the UAE to a limited degree; and on its borders with Libya by aiding its Eastern military ruler. Such engagements pressured the regime to obtain more weapons. According to the 2016 *Military Balance* report, repeated armed attacks of ISIL and other Jihadist groups in Sinai and elsewhere in the country resulted in,

> [S]ubstantive troop deployments and military operations, whilst insurgent activity on Egypt's borders has led to closer security cooperation with other North African states. State breakdown in Libya and Syria, and arms smuggling activities across the border, has become of particular concern. In 2015, Egypt was part of the Saudi-led coalition in Yemen, supplying 800 troops, and warships to enforce a maritime blockade in the Bab el-Mandeb.[83]

Moreover, in the Saudi-led "Operation Restoring Hope" in Yemen, Egypt contributed 6 F-16C Fighting Falcons.[84]

It is important to note that the MoMP still gives increasing and noticeable attention to its civilian business enterprises aside from the arms industry. Since he assumed his position in September 2015, al-Assar added numerous civilian projects aiming at lucrative profit for his ministry. This included a pharmaceuticals plant and another one for baby formula in collaboration with the ministry of health, and other initiatives to manufacture electricity meters for the ministry of power, water sanitation plants for the ministry of housing, engines of washing machines, farming machinery, and heavy trucks. That is in addition to public construction projects to build schools for the ministry of education, large sports facilities, and public roads and bridges, and in addition to land reclamation projects for commercial farming ventures. In fact, the vast majority of published news on the MoMP are about its civilian production and services activities, and most of al-Assar statements are about the ministry's

[79] Jenna Le Bras, "France and Egypt: Allies of Convenience," *Mada Masr,* October 28, 2017

[80] "Egypt Takes Delivery of Second French Mistral Warship," *Reuters*, September 16, 2016.

[81] "Egypt Reportedly Mulling Optional Rafale and Gowind 2500 Purchases," *Quwa: Defense News & Analysis Group,* October 22, 2017, accessed June 10, 2018, https://quwa.org/2017/10/22/egypt-reportedly-mulling-optional-rafale-gowind-2500-purchases/.

[82] "Middle East and North Africa," (2016): 316.

[83] "Middle East and North Africa," (2016): 316.

[84] "Middle East and North Africa," (2017): 412.

contribution to the national economy rather than arms manufacturing.[85]

In addition, under president Sisi the number of ex-generals appointed to key positions in the government has tremendously increased along with the ever-increasing privileges for military civilian businesses. In 2015, to name only a few instances, ex-generals headed the public authorities of industrial development, agricultural development, import and export control, maritime transport, railways, sea and Nile ports, and the Suez Canal. The crucial positions of the minister of transportation, the chairman of the national Telecommunication Holding Company, and the chairman of the Maritime and Land Transport Holding Company were all occupied by other ex-generals. Meanwhile, military contractors continue to function as gigantic parastatal entities that have taken charge of, among other things, executing public construction projects of bridges, roads, hospitals, schools, affordable housing, and sporting clubs.

5. Conclusion

The Egyptian defense industry witnessed a period of rapid growth in the 1950s and 60s, when Egypt's first military regime received technical and financial support from the Soviet Union during the Cold War. An economic crisis and two large wars with Israel, in 1967 and 1973, deeply affected such growth and placed the industry on hold. In the 1980s, Egyptian arms manufacturing witnessed another period of wide expansion based on primarily Western technology, and enjoyed a lucrative regional market. However, the industry deteriorated again in the 1990s. For the past three decades, Egyptian arms factories have stagnated as a result of shifting domestic, regional, and international conditions. Lack of capital, technology transfer, and potential market pressured the Egyptian military factories to massively convert into producing civilian goods. This was followed by the military institution investing in establishing its own business enterprises in manufacturing strategic and consumer goods while providing services to the civilian domestic market. Military enterprises enjoyed extensive state privileges that allow them a monopolistic status in several sectors, and they function above the supposedly free market in the country. Since Egypt transitioned into neoliberalism in the 1990s, the military lost part of its allocated state budget but compensated for this by creating an extensively profitable and multi-sectoral business empire.

Thus, for the past three decades, Egyptian arms production has declined and the country has been widely dependent on arms imports from the U.S. and other Western suppliers. Egypt faced a serious crisis with the continuity of such imports from the U.S. and Europe in 2013, and had to attempt to diversify and seek new co-production agreements to reduce its dependency—especially on the U.S. These attempts do not seem to have yielded considerable outcomes on the ground. Most of the production of the Egyptian military factories is still dedicated to civilian goods for the domestic market. Meanwhile, Egyptian imports of arms from Western suppliers have increased, and new arms co-production programs are noticeably limited.

If Egypt seeks to join emerging countries in arms manufacturing, its military factories that at present largely produce for the civilian market should divest themselves of civilian business and re-focus on partnership efforts with international firms. With necessary and large-scale divestiture, military factories need to rationalize their management by

[85] Hasan and Salim, "Intilaqa Jadidia fi Intaj al-Masani' al-Harbiayy," *al-Ahram,* May 20, 2017.

reducing their over-bloated size and re-training their labor force. Moreover, they should re-orient their activities of co-production and redesign their facilities to manufacture non-conventional weapon systems that would match with recent needs of asymmetric warfare of counterterrorism. Egypt already owns the needed infrastructure and cheap labor to attract Foreign Direct Investment (FDI) and technology for partnership, but it needs to manage these resources efficiently through reviewing its manufacturing policies and restructuring the facilities of arms production accordingly.

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