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Wu, Shang-su

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ABSTRACT

The Tsai Ing-wen administration of Taiwan has taken a different approach in various defense policies compared to its predecessor. Several military build-up projects are aimed at strengthening Taiwan's defense in the context of China's rising military power, but they are unlikely to significantly ameliorate the island's inferior military status, due to several vulnerabilities.

KEYWORDS: Taiwan, defense, China, Tsai Ing-wen, defense industry

INTRODUCTION

Since the Cold War, the Taiwan Strait has been a hotspot in the international community due to the hostility between China and Taiwan, but the security situation has changed significantly in the past decade. As a result of the political impasse that impeded military modernization in Taiwan in the mid-2000s, along with the Ma Ying-jeou administration's emphasis, in the following eight years, on harmonious cross-Strait relations, the cross-Strait military balance has tipped decidedly in Beijing's favor, largely due to the latter's military modernization. After the chairwoman of the Democratic Progressive Party (DPP), Tsai Ing-wen, won a landslide victory as president in Taiwan's 2016 general election, there have been changes in the situation of the Taiwan Strait compared to her predecessor's rapprochement or appeasement policies, despite her emphasis on maintaining the status quo. This paper examines Taiwan's defense under the Tsai administration.

SHANG-SU WU is a Research Fellow at the S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore. He is the author of *The Defence Capabilities of Small States: Singapore and Taiwan's Responses to Strategic Desperation* (London: Palgrave, 2016). Email: <isswu@ntu.edu.sg>.

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LITERATURE REVIEW

Because it is an international hotspot, there is a wealth of literature on Taiwan's security, but only recently have documents been published reflecting the dramatic change in the last decade. Since 2000, the US Department of Defense has published annual reports, *Military and Security Developments Involving the People's Republic of China*, which have continuously followed the military balance across the Strait. Specific chapters focus on possible scenarios and the deployment and capabilities of both sides, as well as the new administration in Taipei.¹ However, restricted by its main focus, the report is unable to provide a deep review of changes occurring in Taiwan, where the security situation is more complicated than purely external threats of conventional warfare from China. Taiwan's official publication, the *2017 Quadrennial Defense Review* (QDR), keeps up to date with the new administration's considerations and plans in defense, but it does not provide as many details as its American counterpart. Furthermore, the official nature of this review constrains the discussion of negative issues.² The *National Defence Report 2017*, another official source, provides various details in the full spectrum of military operations in addition to brief historical reviews.³ However, non-military threats and drawbacks in the armed forces are not sufficiently reviewed.

Inspired by Mearsheimer's negative analysis of Taiwan's situation, Cabestan (2014) discusses the changing cross-Strait relations, including the role of the US in the shifting military balance between Taipei and Beijing.⁴ Although China's threats are obvious and increasing, Taiwan's responses were lukewarm. This inconsistency affects the policy debates in the US. Cabestan later elaborates on other issues concerning Taiwan's security, including Taiwan's asymmetrical dependence on China, and the gap between the Taiwanese identity and its international isolation. The Taiwanese identity portrays Taiwan a sovereign state, but the reality is that the island with its unsettled relations with China lacks recognition in the international community.⁵ Andrew Tan

1. *Military and Security Developments Involving the People's Republic of China* (Washington, DC: Office of the Secretary of Defense, 2017): 6, 75–83.

2. Ministry of National Defense, Republic of China, *2017 Quadrennial Defense Review* (Taipei): 13–92.

3. Ministry of National Defense, Republic of China, *National Defence Report 2017* (Taipei).

4. Jean-Pierre Cabestan, "Recent Changes in Taiwan's Defense Policy and Taiwan-USA Relations," *East Asia* 31 (2014): 343–51.

5. Jean-Pierre Cabestan, "Cross-Strait Integration and Taiwan's New Security Challenges," in Gunter Schubert (ed.), *Taiwan and the "China Impact"* (London: Routledge, 2016): 289–96.

scrutinizes the transformation of Taiwan's defense in recent decades, pointing to feeble investment in defense and analyzing the impact of this decline.⁶ The problem of whether Taiwan's second DPP administration, this time under Tsai, is coping with the issues noted by Cabestan and Tan forms the basis of a new research question this paper will endeavor to answer.

CHANGING SECURITY CIRCUMSTANCES

In contrast to the sharply defined confrontation across the Strait in the past century and the initial years of this century, in the past decade, significant changes in Taiwan's security circumstances have occurred. The first meeting between officials of the Chinese Communist Party and Taiwan's Chinese Nationalist Party (Kuomintang, KMT), in 2005, signified the beginning of a reduction in hostility. Although the KMT was not in power at the time, its majority in congress and strong influence on public opinion shaped the domestic political atmosphere.⁷ After Ma Ying-jeou was elected president in 2008, hostility decreased as Taipei developed rapprochement or appeasement policies toward Beijing. These were later substantiated in bilateral agreements for cross-Strait integration such as the Economic Cooperation Framework Agreement of 2010.⁸ In response to these changed attitudes, China, including its People's Liberation Army (PLA), somewhat relaxed the tension in its attitude to Taiwan.⁹ These political changes were meant to improve Taiwan's security, but they have failed to fix the core issue at hand: achieving a permanent settlement of the relations between the People's Republic of China (PRC) in Beijing and the Republic of China (ROC) in Taipei. Beijing's fundamental threat to Taipei has therefore not been removed; it remains, although in a less obvious manner.¹⁰ The more

6. Andrew T. H. Tan, "The Implications of Taiwan's Declining Defense," *Asia-Pacific Review* 21:1 (2014): 41–53.

7. Xing Zhigang and Song Wenwei, "KMT, CPC Parties Open Historic Dialogue," *China Daily*, March 31, 2005, <http://www.chinadaily.com.cn/english/doc/2005-03/31/content_429706.htm>, accessed December 15, 2017.

8. Jih-Wen Lin, "The PRC as a Player in Taiwan's Domestic Politics," in *Taiwan and the "China Impact"*: 28–29.

9. You Ji, "Politics in Command of Beijing's Military Policy toward Taiwan," in Weixing Hu (ed.), *New Dynamics in Cross-Taiwan Strait Relations* (London: Routledge, 2013): 144–45.

10. Ping-Kuei Chen, Scott L. Kastner, and William L. Reed, "A Farewell to Arms? US Security Relations with Taiwan and the Prospects for Stability in the Taiwan Strait," in Lowell Dittmer (ed.), *Taiwan and China: Fitful Embrace* (Oakland: University of California Press, 2017): 225–26.

harmonious atmosphere favors China, due to the differences between the two sides' military modernization efforts.

Cross-Strait arms competition has been occurring since the initial stages of the Cold War, but Taiwan has gradually lost steam since the early 2000s. Between 2004 and 2008 Taiwan's Congress faced an impasse over a special defense budget. It failed to take up the rare opportunity of purchasing submarines from the US, even though PAC-3 surface-to-air missiles (SAMs) and P-3C anti-submarine aircraft were later acquired, and it delayed other projects, such as the purchase of F-16C/D fighters.¹¹ During President Ma's two terms, Taiwan's military modernization was marginalized to a degree, with fewer projects to replace the existing platforms. Although military procurement from the US was still considerable, the items were mainly munitions and logistical support. In contrast to the 1980s and 1990s, the decrease in arms imports from non-US sources reveals Taipei's difficulty in modernization, since the indigenous defense industry provides limited alternatives.

Regarding US arms sales to Taiwan, probably due to Washington's concerns about Beijing's reaction and the lukewarm nature of Taipei's requests, most projects are either subsystems (such as munitions) for existing assets, upgrades, or defensive systems, such as AH-64E Apache attack helicopters.¹² In other words, Taipei's defense investment is unlikely to match the PLA's growing offensive capabilities. Taiwan's poor military modernization can be attributed to various factors, but restrictive budgets reflect an overall lack of priority assigned to defense by the political leadership. Undeniably, the defense budget still occupies a considerable portion of Taipei's overall governmental expenditure, but it does not correspond to Beijing's progressive improvement of its military capabilities.¹³

Of the various areas where Beijing has undertaken military modernization, its air and sea power are most salient for Taiwan. China has carried out comprehensive modernization of the PLA Air Force (PLAAF) and the

11. Michael S. Chase, "Taiwan's Arms Procurement Debate and the Demise of the Special Budget Proposal: Domestic Politics in Command," *Asian Survey* 48:4 (2008): 703–04, 710–21.

12. International Institute for Strategic Studies, *Military Balance 2016* (London): 306; Stockholm International Peace Research Institute, *Trade Registers*, <http://armstrade.sipri.org/armstrade/page/trade_register.php>, accessed July 24, 2017.

13. Bonnie Glaser and Anastasia Mark, "Taiwan's Defense Spending: The Security Consequences of Choosing Butter over Guns," Asia Maritime Transparency Initiative, March 18, 2015, <<https://amti.csis.org/taiwans-defense-spending-the-security-consequences-of-choosing-butter-over-guns/>>, accessed December 15, 2017.

TABLE 1. Cross-Strait Comparison of Airpower between 2000 and 2016

	<i>China (PLAAF and PLAN)</i>	<i>Taiwan (ROCAF)</i>
2000	4th Gen Fighters: PLAAF 65 J-II (Su-27), 40+ Su-30MKK AWACS: 3 Y-8 (PLANAF) Aerial Refuelling (AR): 6 HY-6 (PLAAF)	4th Gen Fighters: 128 F-CK-1, 56 Mirage-2000-5, 126 F-16A/B AWACS: 4 E-2T
2016	4th Gen Fighters: PLAAF: 95 J-II, 75 Su-27, 73 Su-30MKK, 323 J-10A/B/S, 110 J-II B PLANAF: 24 J-10A/S, 72 J-II B, 14 J-15 (Su-33), 24 Su-30MK2 AWACS: PLAAF: 10; PLANAF: 14 AR: PLAAF: 11, PLANAF: 3	4th Gen Fighters: 128 F-CK-1, 56 Mirage 2000-5, 145 F-16 A/B AWACS: 6 E-2T

SOURCE: By author

PLA Navy (PLAN), seriously challenging Taiwan's air superiority and sea control. At the beginning of the 21st century, the PLAAF and PLAN Air Force (PLANAF) had only numerical superiority over the ROC Air Force (ROCAF) because the latter had more fourth-generation fighters. But as the Chinese aeronautical industry mass-produced the J-10 and J-II series of fourth-generation fighters, and China also acquired some Russian Su-30s, the ROCAF failed to introduce any new fighters. Thus, as of 2016, the situation was reversed (Table 1).¹⁴

The other advantage Taiwan had, in its airborne warning and command systems (AWACS), has also been erased by China with the creation of indigenous assets for both of its air forces. And the expansion of China's fleets of aerial refueling aircraft and the addition of an aircraft carrier together present Taiwan with multidirectional aerial threats. China's airlift capacity has also been increased, and will be even larger if civil aircraft are mobilized. Beijing would not be able to concentrate *all* of its combat aircraft on the Taiwan theatre, but its large numerical advantage would help even if only a portion of its forces were used. Furthermore, most of Taiwan's airbases remain exposed to both missile attacks and sabotage. These factors do not mean that the ROCAF would lose to its PRC counterparts, but the odds are unfavorable for the former. And if Taiwan saves some fighters by avoiding engagement, the lack of air cover will leave other services in greater jeopardy.

14. International Institute for Strategic Studies, *Military Balance 2000* (London): 196–97, 215; *Military Balance 2016*: 244–45, 292.

In the maritime sphere, PLAN's surface and underwater fleets largely replaced old platforms with new ones in 2016, giving them a greater likelihood of securing sea control than they had in 2000. At that time, most of PLAN's major surface vessels—destroyers and frigates—were armed with HQ-7 SAMs based on the French Crotale model, with a 12 km range, which would suggest a limited response capacity for more than one attack from anti-ship cruise missiles (ASCMs).¹⁵ At the same time, PLAN's underwater fleets were mainly composed of old submarines with high noise levels. Most Chinese submarines, including the new ones procured from Russia, were unable to launch ASCMs, making their strike ranges relatively short. Thus, it would have been difficult for PLAN to establish sea control in the face of ASCMs from the ROC Navy (ROCN). The ROCN's major surface vessels were better armed, and they would likely have constrained their PRC counterparts' operational flexibility.

Thus, an amphibious invasion would have been infeasible for Beijing, not to mention the limited size of its landing fleets. Blockade through sea denial would be the only practical option; it would have taken longer to complete and could have been disrupted by US military intervention. But in the subsequent 18 years, PLAN has introduced many new major surface vessels, with layered defense against ASCMs, and at least one short- or mid-range SAM system, plus a close-in weapon system. PLAN has also introduced a considerable number of new submarines, with less noise and with ASCM launch capability, to replace the old ones.

Its amphibious capacity has also been expanded, making a potential invasion of Taiwan more credible (Table 2).¹⁶ Because PLAN has an increasing number of major surface vessels capable of defending against ASCMs, it could perhaps establish sea control, particularly if air superiority is also secured. Within the waters under control, amphibious operations would be possible. Although the capacity of projection in landing would be limited, there would be a psychological impact beyond the operation itself. And although PLAN is still inferior to the US Navy, its improving capability in anti-access and area denial could delay or even deter US military intervention.

Apart from assets, the personnel of Taiwan's armed forces also present at least two challenges to its security: espionage and conscription. In the past

15. "HQ-7 Short-Range Air Defense Missile System," *Military Today*, <<http://www.military-today.com/missiles/hq7.htm>>, accessed July 19, 2017.

16. *Military Balance 2000*: 195, 214–15; *Military Balance 2016*: 242–43, 292.

TABLE 2. Cross-Strait Comparison of Major Naval Assets

	<i>China (PLAN)</i>	<i>Taiwan (ROCN)</i>
Submarines in 2000	Armed with ASCM & Torpedo: 1 type-039, 1 type S5G Armed with Torpedo: 2 Project 877, 3 Project 636, 17 type 035, 34 type-033	Armed with Torpedo: 2 Guppy II class, 2 Zwaardvis class
Submarines in 2016	Armed with ASCM & Torpedo: 8 Project 636N, 27 type 039A/B/G, 3 type 091, 2 type 093 Armed with Torpedo: 2 Project 877, 2 Project 636, 12 type 035	Armed with ASCM & Torpedo: 2 Zwaardvis class Armed with Torpedo: 2 Guppy II class
Major Surface Combatants in 2000	With Layered ASCM Defense (1): 1 Sovremenny class	With Layered ASCM Defense: 7 upgraded Gearing class, 7 Perry class
Major Surface Combatants in 2016	With Layered ASCM Defense: 4 Sovremenny class, 2 type 052, 2 type 052B, 6 type 052C, 2 type 052D, 2 type 051C, 2 type 054, 20 type 054A	With Layered ASCM Defense: 4 Kidd class, 8 Perry class, 6 Knox class
Landing Ships in 2000	LST: 18 LSM: 42	LSD: 1 LSM: 4 LST: 12
Landing Ships in 2016	LPD: 3 type 071 LST: 16 LSM: 31	LSD: 1 LST: 12

SOURCE: By author

decade, there have been frequent reports in the media of espionage in Taiwan, revealing a serious risk.¹⁷ For a small state vis-à-vis a great power, the largest tactical advantage is uncertainty as to deterrence in peacetime, and surprise for defense during wartime. Espionage has the power to neutralize both uncertainty and surprise. Technologically, if China were to obtain Taiwan's military electronic parameters, it could destroy Taiwan's communication and surveillance and thus its ability to fight. But despite the PLA's clear military threat, limiting conscription has become a convenient policy for both KMT and DPP politicians to win popularity. From 2000 on, administrations of both parties shortened the terms of compulsory military service

17. Lu Hsin-hui and Lilian Wu, "U.S. Concerned about Leaks in Taiwan Espionage Case: Foreign Minister," *Focus Taiwan*, May 10, 2017, <<http://focustaiwan.tw/news/aip/201705100014.aspx>>; Aaron Jensen, "China Expands Its Spying against Taiwan," *The Diplomat* (Tokyo, Japan), March 21, 2017, <<https://thediplomat.com/2017/03/china-expands-its-spying-against-taiwan/>>, accessed December 15, 2017.

and proposed all voluntary forces (AVF) in regular units; conscripts will receive only four months of training and then become reserves for mobilized units.¹⁸ This policy might be good for countries with a low security threat, but this is not the case for Taiwan. There have been several delays due to insufficient recruitment, suggesting difficulty in the transition to AVF. The training of conscripts and then reserves presents another challenge, in addition to the potential downsizing of the armed forces.

Taiwan's vulnerability is evident on more levels than just the military: the economy and demography present the most salient weaknesses. Since the late 1980s, cross-Strait economic ties have rapidly increased, with the consequent integration contributing further to Taiwan's economic dependence on China, which is Taiwan's largest export market and its largest import market. Rather than suiting the goal of interdependence, China's globally expansive trade and investment in fact marginalize the role of Taiwan in the Chinese economy.¹⁹ In other words, the unilateral economic dependence that has emerged allows Beijing to use the economy as leverage over Taipei. For example, "technical" or "bureaucratic" delays in trade are likely to have a certain psychological impact on Taiwan's commercial sector, not to mention potential official actions, such as sanctions. Because Beijing has used such tactics with Manila and Tokyo in the early 2010s, it is reasonable to predict their application to Taipei if required.²⁰ Besides trade, cross-Strait integration has opened Taiwan up to investment from China, which could have spill-over effects on the political sphere.²¹

The demographic interchanges across the Strait create security issues in both directions. As the natural outcome of integration, with the special

18. "Military Personnel," *Global Security*, December 17, 2015, <<https://www.google.com.sg/#q=Taiwan,+military+service+22+months&start=10>>, accessed November 2, 2016; 2017 *Quadrennial Defense Review*: 60.

19. Taiwan Institute of Economic Research, *Cross Strait Economic Statistics Monthly*, No. 296 (December 2017): 1–2.

20. Andrew Higgins, "In Philippines, Banana Growers Feel Effect of South China Sea Dispute," *Washington Post*, June 10, 2012, <https://www.washingtonpost.com/world/asia_pacific/in-philippines-banana-growers-feel-effect-of-south-china-sea-dispute/2012/06/10/gJQA47WVTV_story.html>; Elliot Brennan, "China's Strengthening Position on Rare Earths," *The Diplomat*, July 9, 2015, <<http://thediplomat.com/2015/07/chinas-strengthening-position-on-rare-earths/>>, accessed July 24, 2017.

21. Ben Blanchard, "China Says Investment Will Help Unification with Taiwan," *Reuters*, March 11, 2017, <<http://www.reuters.com/article/us-china-parliament-taiwan-idUSKBN16103K>>, accessed July 24, 2017.

advantage of the two sides having largely similar cultures and a common language (Mandarin), the movement of populations from both sides is facilitated. The number of Taiwanese living in China is between one and three million, with an additional 5.7 million tourists in 2016. Chinese visitors to Taiwan numbered close to four million in 2014, 4.13 million in 2015, 3.47 million in 2016, and 2.69 million in 2017 as Beijing lowered the quota after Tsai's inauguration.²² The Taiwanese presence in China could allow Beijing to put pressure on Taipei. China could select those who have political influence in Taiwan and cross-Strait economic interests, and then lure or pressure them to cooperate with China's agenda, from inserting certain viewpoints when expressing their opinions publicly, to donating to and voting for specific candidates in elections. In the extreme, they could even be used as hostages or human shields to disrupt Taiwan's responses.

Technically, Taipei could take similar actions toward the Chinese visitors and residents under its jurisdiction, but these are unlikely to work with the Chinese Communist Party's authoritarian polity. The various channels available for Chinese to enter Taiwan could be utilized by spies and special forces for such actions as penetration, intelligence collection, reconnaissance, targeting, assassination, and sabotage. The more than three million people entering annually, about 10,000 daily, are most likely beyond the capacity of Taiwan's internal security. Beijing also has the option of deploying personnel with registration in Hong Kong and Macao to increase the quantity even further. Hundreds or even thousands of special forces inside Taiwan could create tremendous chaos that would disrupt military responses. If such a plan were realized, Taiwan's military situation would shift from conventional island defense to hybrid warfare, because non-conventional tactics, such as sabotage, information warfare and cyber-attacks will be conducted within the island. In

22. Derek Grossman, "A Bumpy Road Ahead for China-Taiwan Relations," RAND Corporation, September 22, 2016, <<https://www.rand.org/blog/2016/09/a-bumpy-road-ahead-for-china-taiwan-relations.html>>; Ralph Jennings, "China's Detention of Taiwan Rights Activist Strains Relations," *VOA News*, April 11, 2017, <<https://www.voanews.com/a/china-detention-of-taiwan-rights-activist/3805188.html>>; Mainland Affairs Council, Republic of China, *Report of Cross-Strait Economic Exchanges*, May 2017, <<http://ws.mac.gov.tw/001/Upload/295/relfile/7821/71601/01126590-b531-48ae-b082-cbf4b1eb6115.pdf>>; National Immigration Agency, Republic of China, "Statistics," December 18, 2017, <<https://www.immigration.gov.tw/ct.asp?xItem=1341715&ctNode=29699&mp=1>>, accessed January 8, 2018. Mainland Affairs Council, Republic of China, *Cross-Strait Economic Statistics Monthly No. 301 (May 2018)*, <<https://www.mac.gov.tw/News.aspx?n=2C28D363038C300F&sms=231F60B3498BBB19>>, accessed June 26, 2018.

sum, on the eve of the Tsai administration's inauguration in 2016, Taiwan was more vulnerable than it was in 2000.

THE TSAI ADMINISTRATION'S RESPONSES

Since the inauguration, the Tsai administration has taken a moderate approach to security issues. One main reason the DPP won the 2016 elections was the popular backlash against the KMT's policies of rapprochement or appeasement toward China, evident in cross-Strait integration, an impact of the Sunflower Movement in 2014.²³ However, as the KMT has maintained harmonious relations between Taipei and Beijing, the DPP faces a dilemma: popular expectation of a new and more independent approach to cross-Strait relations, versus strong pressure from China. Moreover, public opinion might include a contradiction: most people would prefer to maintain a certain socio-political distance from China instead of undergoing rapid integration, but they may not want to sacrifice their economic well-being to Chinese countermeasures. These could include anything from economic sanctions to open warfare.²⁴ Therefore, the current DPP administration has emphasized maintaining the "status quo" since the election. This stance has not been welcomed by Beijing because of Taipei's incomplete acceptance of the 1992 consensus, and most likely because of its perception of the progress of cross-Strait integration from 2008 to 2016.²⁵ To pressure Taiwan to accept the 1992 consensus, China continues to take a range of actions, including narrowing the quota of its tourists to Taiwan, postponing bilateral official contacts, tightening the diplomatic isolation of Taiwan, and increasing the frequency of Chinese military vessels and aircraft passing by Taiwan.²⁶ However, these

23. Joseph Wong, "Taiwan Elections 2016: Certain Outcome, Uncertain Implications," Asia Pacific Foundation of Canada, January 8, 2016, <<http://www.asiapacific.ca/canada-asia-agenda/taiwan-elections-2016-certain-outcome-uncertain-implications>>, accessed December 17, 2017.

24. Jenny Chau Vuong, "A Balancing Act: U.S. and the Cross-Strait Relation," Center for International Maritime Security, April 21, 2017, <<http://cimsec.org/32254-2/32254>>, accessed January 7, 2018.

25. Miao Tsung-han and Lilian Wu, "Taiwan's Sovereignty Cannot Be Compromised: MAC," *Taiwan Focus*, July 1, 2017, <<http://focustaiwan.tw/news/aip/201707010015.aspx>>; "Chinese mainland urges DPP to Give Up 'Taiwan Independence' Stance," *Xinhua Net*, June 28, 2017, <http://news.xinhuanet.com/english/2017-06/28/c_136401531.htm>, accessed July 24, 2017.

26. Jermyn Chow, "Taiwan Sees More Tourists as Arrivals from China Drop," *Straits Times* (Singapore), April 16, 2017, <<http://www.straitstimes.com/asia/east-asia/taiwan-sees-more-tourists-as-arrivals-from-china-drop>>; "Liaoning Carrier Demonstrates China's Power off Taiwan Coast,"

moves remain below the level of economic warfare or the use of force, and probably reflect Taiwan's moderate stance toward its large neighbor.

Under the guideline of maintaining the status quo, Taiwan's official 2017 QDR has drawn up a clear plan for defense: a layered defense in the air, sea, and onshore to stop a PLA invasion. Generally, the logic is similar to the original slogan used by the ROC armed forces for decades: "air superiority, sea control, and anti-landing." However, the PLA's superiority is forcing Taipei to move toward denial instead of control, and the impasse around obtaining foreign arms is driving Taipei to focus on its indigenous defense industry, and to consider joint operations, financial affordability, and information and cyber security. Despite greater investment, the QDR still claims that the transition to AVF is a major policy.²⁷ The defense report of 2017, published later than the QDR, adds asymmetrical warfare as a solution to its military inferiority.²⁸ So far, the Tsai administration is carrying out these strategies, particularly in the indigenous defense industry.

A range of indigenous projects are being launched or further developed by the Tsai administration. During the campaign, Tsai listed the defense industry as a key element in economic development.²⁹ Since foreign sources have become less accessible, indigenous industries could present alternatives, for both the domestic economy and self-sufficiency. To date, the ROCN is the main beneficiary of indigenous projects, including submarines, stealth corvettes, landing platforms, high-speed minelayers, transport ships, and frigates. But the entire construction schedule lasts up to 23 years.³⁰ The minehunter project is likely to be delayed because the navy cancelled the contract due to

Deutsche Welle (Bonn, Germany), June 27, 2017, <<http://www.dw.com/en/liaoning-carrier-demonstrates-chinas-power-off-taiwan-coast/a-39437971>>; Chris Horton and Steven Lee Myers, "Panama Establishes Ties with China, Further Isolating Taiwan," *New York Times*, June 13, 2017, <<https://www.nytimes.com/2017/06/13/world/asia/taiwan-panama-china-diplomatic-recognition.html>>; Chong Koh Ping and Jermyn Chow, "China Cuts Official Contact with Taiwan," *Straits Times*, June 26, 2016, <<http://www.straitstimes.com/asia/east-asia/china-cuts-official-contact-with-taiwan>>, accessed July 24, 2017.

27. 2017 *Quadrennial Defense Review*: 38–48.

28. *National Defence Report 2017*: 74.

29. Jake Chung, "Tsai Unveils Ambitious National Defense Policy," *Taipei Times*, October 30, 2015, <<http://www.taipetimes.com/News/taiwan/archives/2015/10/30/2003631276>>, accessed July 20, 2017.

30. Wendell Minnick, "Taiwan Moves on \$14.7B Indigenous Shipbuilding, Upgrade Projects," *Defense News*, June 23, 2016, <<http://www.defensenews.com/story/defense/naval/ships/2016/06/23/taiwan-navy-destroyer-frigate-sub/86281948/>>, accessed July 20, 2017; Ministry of National Defense, *National Defence Report 2017*: 95.

a scandal surrounding the bankruptcy of the contractor.³¹ The ROCAF's advanced jet trainers will also be developed and manufactured locally.³² The ROC Army (ROCA) has not been assigned any additional projects, but its CM-32 Yunpao (Cloudy Leopard) armored personnel carriers (APCs) will give way to an updated version.³³ SAMs, ASCMs, air-to-air missiles, and air-to-surface missiles remain the niche of Taiwan's defense industry. Since the late 1970s, the Chung-Shan Institute of Science and Technology has developed Hsiung-Feng (HF) I, II, and III ASCMs, Ting-Kung (TK) I, II, and III SAMs, Tien-Chien (TC) I and II air-to-air missiles, and Wan Chien air-to-surface missiles, in addition to HF-IIIE land attack cruise missiles and Yun-Feng supersonic cruise missiles.³⁴ Currently, HF-III ASCMs, TC-IIN SAMs (the naval air defense version deployed on vessels), TK-III SAMs, Wan Chien air-to-surface missiles, and HF-IIIE cruise missiles are believed to be in production.³⁵

Yun-Feng cruise missiles, with a probable range of more than 1000 km, should be under development, but there is a report that the Tsai administration terminated this project. This has not been confirmed, but officially denied.³⁶ A later report mentions Taipei's ambition of extending the range of Yun-Feng to 2000 km, covering Beijing.³⁷ Despite the more amicable

31. Lu Hsin-hui and Evelyn Kao, "Defense Ministry Cancels Warship Contract with Ching Fu," *Focus Taiwan*, December 13, 2017, <<http://focustaiwan.tw/news/aip1/201712130011.aspx>>, accessed January 7, 2018.

32. Chris Pocock, "Taiwan Confirms Indigenous Jet Trainer Development," *Aviation International News*, February 16, 2017, <<http://www.ainonline.com/aviation-news/defense/2017-02-16/taiwan-confirms-indigenous-jet-trainer-development>>, accessed July 20, 2017.

33. Mike Yeo, "Taiwan to Acquire Orbital ATK Cannons for Local Vehicle Program," *Defense News*, October 2, 2017, <<https://www.defensenews.com/global/2017/10/02/taiwan-acquires-orbital-atk-cannons-for-local-vehicle-program/>>, accessed January 7, 2018.

34. "Taiwan," Nuclear Threat Initiative, June 2015, <<http://www.nti.org/learn/countries/taiwan/delivery-systems/>>; "Yun Feng," Missile Threat, July 13, 2017, <<https://missilethreat.csis.org/missile/yun-feng/>>, accessed July 20, 2017.

35. Mike Yeo, "Taiwan to Upgrade Indigenous Missile Capabilities," *Defense News*, February 6, 2017, <<http://www.defensenews.com/articles/taiwan-to-upgrade-indigenous-missile-capabilities>>, accessed June 30, 2017.

36. Richard D. Fisher Jr., "Missiles, Nuclear Arms and Taiwan," *Taipei Times*, October 2, 2016, <<http://www.taipetimes.com/News/editorials/archives/2016/10/02/2003656335>>; Wang Cheng-Chung and Y. F. Low, "MND Dismisses Report of Missile Project Halt," *Focus Taiwan*, September 20, 2016, <<http://focustaiwan.tw/news/aip1/201609200013.aspx>>, accessed July 20, 2017.

37. Sophia Yang, "Taiwan set to mass produce missiles capable of reaching Beijing: reports," *Taiwan News*, April 24, 2018, <<https://www.taiwannews.com.tw/en/news/3413013>>, accessed June 26, 2018.

attitude of the Trump administration compared to its predecessor, the list of arms sales in 2017 remains focused on munitions and subsystems, which may indeed further justify the investment in the indigenous defense industry.³⁸

If Taiwan's defense industry can carry out these projects to a high standard, the three services would all benefit, each in its own way. The much built-up ROCN would be able to act on three fronts against PLAN: littoral, at sea, and underwater. In the face of China's anti-access and area denial firepower, the major surface vessels would operate in the Pacific rather than in the Strait. The stealth corvettes and fast attack craft, with their higher survivability, would hide in Taiwan's western coastal and other littoral areas to deter amphibious invasion by PLAN and perform other naval operations. The ROCN's major surface vessels, with longer ranges of surveillance and ASCMs, could pin down their PLAN counterparts, a crucial element for escorting amphibious fleets. Those destroyers and frigates could also keep sea lines of communication open in less intense scenarios. Taiwan's submarines can deter PLAN's overall offshore activities, whether in a blockade or an invasion. They could in fact have a psychological impact on China's economy due to their ability to disrupt its sea lines of communication. If Taipei can overcome the technical obstacles to arm submarines with cruise missiles, the strategic influence could be even greater. Permission for US companies to sell the related technologies would lower the technical obstacles.³⁹

For the ROCAF, although the XAT-5 aircraft is merely an advanced jet trainer rather than a fighter, its origin in the F-CK-1 fighter makes it a potentially capable platform for aerial combat.⁴⁰ It might not be sufficient to counter China's new fighters, but the XAT-5 could pose a threat to less mobile aircraft, such as H-6 bombers. Moreover, the aging F-5E/Fs will be replaced with the more advanced model. The obsolete V-150 and M-113 APCs would be replaced by CM-32 APCs, with their potential to be developed for other purposes such as mortar platforms and tank destroyers, as

38. Aaron Mehta, "US Clears Arms Deal for Taiwan Worth up to 1.3B," *Defense News*, June 29, 2017, <<http://www.defensenews.com/articles/us-clears-massive-arms-deal-for-taiwan>>, accessed June 30, 2017.

39. "Trump Allows Sale of Military Technology to Taiwan," *NHK World*, April 12, 2018, <https://www3.nhk.or.jp/nhkworld/en/news/20180412_18/>, accessed May 8, 2018.

40. Chris Pocock, "Taiwan Confirms Indigenous Jet Trainer Development," *Aviation International News*, February 16, 2017.

well as to share the burden of the main battle tanks (MBTs) before replacements can be acquired.⁴¹

Despite the omission of sophisticated platforms, the Trump administration's first arms deals with Taiwan have been considerable in strategic terms. AGM-88B high-speed anti-radiation missiles and AGM-154C joint standoff weapons would strengthen ground attack missions by the ROCAF's F-16 fleets in the face of China's improving air defense capability. Mk-54 light torpedoes would also update the anti-submarine warfare capability of the ROCN's surface vessels and aircraft. MK-48 heavy torpedoes would replace the aging and unreliable SUT torpedoes to maintain the capabilities of the two Dutch Zwaardvis-class submarines.⁴² Finally, the US's sale of related technologies would be critical for Taiwan's indigenous submarine project.

CHALLENGES TO MILITARY MODERNIZATION

For Taiwan, in spite of the optimistic picture for indigenous projects and the positive aspect of the latest arms deals, challenges remain. For the indigenous naval projects, these include use of foreign technology and integration, financial affordability, and the growth of PLAN. Foreign technologies such as engines, radars, and weapons, will be indispensable for future vessels.⁴³ Securing the supply of foreign parts, such as the AEGIS system and submarine operating systems, is thus essential. One successful example, the Indigenous Defensive Fighter (now called the F-CK-1), has demonstrated Taiwan's industrial capacity to adopt foreign technology, but the situation would be quite different for submarines. Since the 1950s, the US defense industry has not built any diesel-electric submarines; active builders with research and development capacity can only be found in Russia, Europe, and Japan, in addition to China.⁴⁴ Given its strong bilateral ties with China, Russia cannot be a source of submarine technology for Taiwan. Based on the significant

41. "CM-32 Yunpao Armoured Personnel Carrier," *Army Technology*, <<http://www.army-technology.com/projects/cm-32-yunpao-armoured-personnel-carrier/>>, accessed December 17, 2017.

42. "Major Arms Sales: June 2017," Defense Security Cooperation Agency, June 30, 2017, <<http://www.dsca.mil/major-arms-sales/archives/201706>>, accessed July 24, 2017.

43. Stockholm International Peace Research Institute, *Trade Registers*, <http://armstrade.sipri.org/armstrade/page/trade_register.php>, accessed July 24, 2017.

44. James Holmes, "A US Diesel Submarine Renaissance Would Be a Boon for Taiwan Navy," *Global Taiwan Brief* 2:14 (April 2017), <<http://globaltaiwan.org/2017/04/05-gtb-2-14/>>, accessed December 17, 2017.

relations, such as trade and investment, EU governments with high levels of consideration for China would not provide submarine or related technology to Taiwan.

In view of the confrontational Sino–Japanese relations, there have been rumors in the press that Japan could provide submarine technology to Taiwan since the 2011 lifting of its ban on exporting arms. But doubts have been raised as to the feasibility of this source, in particular in view of Japan’s failure to win the recent Australian submarine project.⁴⁵ This incident may reveal the Japanese defense industry’s difficulties of supporting building submarines overseas. Even if Taipei eventually finds a foreign technical source for submarine development, the Australian and South Korean cases show the difficulties (such as delays) that are likely in building submarines locally with external assistance.⁴⁶ In this case, integration would present a further challenge, because submarines are unprecedented within Taiwan’s shipbuilding industry. For surface vessels, foreign technology and integration would be easier, but the delayed development of the Tuo-jiang-class corvette suggests challenges there as well.⁴⁷

Even if issues of production are resolved, the long time frame for completing all projects, predicted to be up to 23 years, presents challenges in terms of finance and PLAN’s continued progress in parallel. Several factors, including Taiwan’s sluggish economy, rising government debts, and possible changes in leadership make continuous and stable funding for Taiwan’s naval build-up over two decades rather uncertain. Technical issues are likely to increase the risk and cause delays and additional costs, issues that are not rare in countries

45. Mike Yeo, “Taiwan Struggles to Acquire 5 Types of Submarine Tech for Local Program,” *Defense News*, April 7, 2017, <<http://www.defensenews.com/articles/taiwan-struggles-to-acquire-5-types-of-submarine-tech-for-local-program>>, accessed July 24, 2017.

46. “South Korea Submarine Import and Export Behavior,” NTI, September 28, 2015, <<http://www.nti.org/analysis/articles/south-korea-submarine-import-and-export-behavior/>>; Derek Woolner, “How Kockums was Selected for the Collins Class Submarine,” Research Paper 4 2001–02, Parliament of Australia, September 18, 2001, <http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/pubs/rp/rp0102/02RP04>, accessed July 24, 2017.

47. Lo Tien-pin and Jason Pan, “Navy Stops Tuo Jiang-Class Trials,” *Taipei Times*, February 6, 2015, <<http://www.taipetimes.com/News/taiwan/archives/2015/02/06/2003610946>>; Lo Tien-pin and William Hetherington, “Navy Plans to Build an Upgraded Version of Corvette: Source,” *Taipei Times*, April 9, 2017, <<http://www.taipetimes.com/News/front/archives/2017/04/09/2003668362>>, accessed January 7, 2018; Bertil Lintner, “Taiwan to step up construction of warships,” *Asia Times*, May 16, 2018, <<http://www.atimes.com/article/taiwan-to-step-up-construction-of-warships-as-beijing-ramps-up-threats/>>, accessed June 26, 2018.

with experience in military research and development.⁴⁸ The recent Ching Fu incident is a reminder that the financial condition of the contractor can present a risk as well.⁴⁹ Unlike in the World War II era of the Liberty ships, building most naval ships is a time-consuming process, and Taiwan may not have the luxury of waiting, given the astonishing pace with which China is launching and commissioning naval vessels.⁵⁰ This trend may not make for a larger PLAN, but will at least provide a more capable navy. In other words, even if Taiwan's shipbuilding programs are finished on time, it will remain far behind China in the size and capability of its navy. More Chinese technological breakthroughs, such as laser guns, would make it even harder for Taiwan to catch up.

The XAT-5 and American guided munitions provide only partial answers to the ROCAF's overall challenge. The ROCAF's few airbases are vulnerable to catastrophic damage from a variety of attacks by China.⁵¹ This is not helped by the fact that appropriate fighters, such as the short takeoff/vertical landing F-35B, have not been included on the procurement list, even though the official QDR mentions the introduction of such fighters to increase survivability.⁵² In other words, such a capability will not be realized in the near future. Building more airbases, airstrips, and alternative runways would help, but such efforts ended with the Chiashan and Shihzishan shelters in Eastern Taiwan and five emergency highway strips in the west.⁵³ It is uncertain whether these facilities have enough capacity and protection to sustain the ROCAF's fighter fleets during wartime, because PLAN may now be able to project land-attack firepower from the Pacific and launch sabotage. In addition to the runway problem, the numerical superiority of the PLAAF

48. One of the most notorious cases would be the F-35, despite experienced contractors. "More F-35 Delays Predicted," *Aviation Week*, July 1, 2013, <<http://aviationweek.com/defense/more-f-35-delays-predicted>>, accessed July 24, 2017.

49. One of the main reason for Ching Fu to win the contract in contrast to larger competitors was its willingness to shoulder the financial burden in the early stages instead of requesting the ROCN to pay. Ironically, Ching Fu's financial conditions became the problem. Lu Hsin-hui and Evelyn Kao, "Defense Ministry Cancels Warship Contract with Ching Fu," *Focus Taiwan*, December 13, 2017, <<http://focustaiwan.tw/news/aip/201712130011.aspx>>, accessed December 17, 2017.

50. *Military Balance 2017*: 259–60.

51. Oriana Skylar Mastro and Ian Easton, *Risk and Resiliency: China's Emerging Air Base Strike Threat* (Arlington, VA: Project 2049 Institute, 2017): 3–9.

52. "F-35 Variants," F-35 Lightning II, <<https://www.f35.com/about/variants>>, accessed July 22, 2017; 2017 *Quadrennial Defense Review*: 44.

53. Ian Easton, "Taiwan, Asia's Secret Air Power," *The Diplomat*, September 25, 2014, <<http://thediplomat.com/2014/09/taiwan-asias-secret-air-power/>>, accessed July 22, 2017.

and PLANAF over the ROCAF will continue as a result of the former's endless acquisitions from the Chinese and Russian aviation industries, and the latter's possible retirement of its Mirage 2000s due to lack of upgrade.⁵⁴ A 2016 RAND report suggests that Taiwan shift to SAM-centered air defense instead of fighters, given the former's higher efficiency and survivability in the face of the superior airpower of China.⁵⁵ (Various experts do not agree with this proposal, nor does the official QDR accept the recommendation.⁵⁶) But as long as Beijing is able to invest continuously in airpower, the strategic pressure on the ROCAF will continue to grow, making the current structure potentially inadequate for the foreseeable future. That is, more-effective answers for Taiwan's air defense would reject mere modernization in favor of a more technological or strategic revolution.

Nor will the needs of the ROCA be met fully with eight-wheeled armored vehicles. In the bottom layer of the layered defense strategy, the army finds itself marginalized regarding investment, with a range of obsolete arms, including some of WWII vintage, still in service. Insufficient modernization hampers the ROCA's strategic mission mentioned in the QDA, that of anti-landing. At present, the ROCA has some advantage there in its aviation brigades of AH-1W and AH-64E attack helicopters, assisted by OH-58D reconnaissance helicopters, but it remains reliant on outdated artillery and armor units to strike an invader's beachheads. The ROCA's artillery force indeed has some state-of-the-art assets, such as M-109A5 self-propelled guns and Thunder-2000 multi-launch rocket system, but continues to list a range of WWII equipment, such as M-101 105 mm, M-114 155 mm, and M-115 8-inch howitzers. These have low mobility and short ranges, and require larger crews to operate. The ROCA's armored units of M-60A3 and M-48H tanks are relatively new, but lack modern armor and other protections, making them vulnerable to anti-tank weapons.⁵⁷ So far, the administration has failed to

54. Joseph Yeh, "Military Denies It Plans to Retire Fighter Jets," *China Post* (Taipei, Taiwan), December 6, 2016, <<http://www.chinapost.com.tw/taiwan/national/national-news/2016/12/06/485968/military-denies.htm>>, accessed July 22, 2017.

55. Michael J. Lostumbo, David R. Frelinger, James Williams, and Barry Wilson, *Air Defense Options for Taiwan* (Santa Monica, CA: RAND Corporation, 2016): 32–43.

56. William Lowther, "Air Defense Issues World's Most Difficult: RAND," *Taipei Times*, April 11, 2016, <<http://www.taipetimes.com/News/taiwan/archives/2016/04/11/2003643698/1>>, accessed July 22, 2017; 2017 *Quadrennial Defense Review*: 44.

57. *Military Balance 2017*: 327; Jeff Kindard, *Artillery: An Illustrated History of Its Impact* (Santa Barbara, CA: ABC-CLIO, 2007): 388, 465; Christopher F. Foss and Richard Stickland, *Jane's Armour*

undertake modernization of the artillery and armor. Of course, it is reasonable for Taipei to concentrate its limited resources on the aerial and naval projects, which deserve higher strategic priority in preventing an invasion from reaching Taiwan. But if the capabilities of the ROCA are allowed to erode with its aging assets, it will eventually become unreliable as the last layer of defense, and have a merely symbolic role.

On the subject of Taiwan's layered defense strategy, a natural question emerges: what if the three layers are not enough? The QDA does not mention anything beyond anti-landing, and yet some parts of Taiwan's military organization, such as the mountain companies of aboriginal reserve soldiers, are meant for guerrilla warfare.⁵⁸ On the one hand, fighting beyond the beachhead could be interpreted as a scorched earth policy, which would conflict with the goal espoused in the QDR, to "protect the people and their property from devastation."⁵⁹ On the other hand, given China's firepower projection and likely penetration, the people of Taiwan and their property would likely be decimated before an anti-landing operation could be initiated. If the strategic guidance is truly focused on saving the lives and property of citizens, then warfare should be constrained to aerial and maritime engagement, or the option of direct surrender to avoid all armed conflict be considered from the start. When war is chosen by decision-makers, the natural consequence of this choice indicates a sacrifice of certain values, such as life and property, while protecting others, like sovereignty and democracy. Therefore, a foundational question for Taiwan regards the military options after an *unsuccessful* anti-landing campaign. If Taiwan is serious about consistently retaining its values during wartime, then the Tsai administration's conscription policy could be seen contradictory.

Despite the differences in defense policy between Tsai and her predecessors, the transition to AVF has been retained. From 2000, the DPP and KMT administrations took turns shortening the duration of conscription, and Ma Ying-jeou's administration claimed to achieve AVF during his term, but failed. Taipei's AVF policy has two parts: conscripts complete four

and *Artillery Upgrades 2006–2007* (Surrey: Jane's Information Group, 2006): 45, 51; Michael E. Haskew, *Artillery Compared and Contrasted* (Heatherton, Australia: Hinkler, 2008): 66–68, 144.

58. Stephanie Chao, "Special Mountain Reserve Troop Training Is Revealed," *China Post*, November 2, 2015, <<http://www.chinapost.com.tw/taiwan/national/national-news/2015/11/02/449870/special-mountain.htm>>, accessed July 12, 2017.

59. 2017 *Quadrennial Defense Review*: 30, 39.

months of basic training and are then listed in reserve units; regular units are manned with voluntary personnel.⁶⁰ But this goal was not met due to poor recruitment numbers.⁶¹ Before returning to power, the DPP showed a certain inclination to resume conscription, but the administration has taken the opposite path, proceeding with the transition to AVF in a manner similar to the previous administration.⁶² With the majority of seats in congress, the current DPP administration had an excellent opportunity to reverse the trend, but it has chosen to simply follow the original policy, which is likely to undermine, in different ways, the capability of both regular and reserve units. The difficulty of recruitment results in a manpower shortage in regular units, which had been supplied with conscripts.⁶³ Four months of basic training for conscripts does not provide experience in large-scale operations, nor does it improve their ability to conduct joint operations. It is doubtful that their five to seven days of refresher training every two years would enable them to hold on to the limited skills they learned in their first four months. So this also means that the capability of reserve units is affected.⁶⁴ Taiwan's low fertility rate also implies a shrinking talent pool for recruitment in the foreseeable future. That is, it will become difficult for Taipei to maintain the size of its armed forces, not to mention the quality of personnel.⁶⁵

The original conscription and reserve system was not without its faults, but improving it significantly would require a more strenuous effort than transitioning to AVF, in terms of defense. Properly trained conscripts are valuable not only in conventional warfare, including in strengthening the capacity of

60. Daniel Garrun, "Taiwan Military to Convert to All-Volunteer Force," *Naval Technology*, August 8, 2008, <<http://www.naval-technology.com/news/news40391.html>>, accessed July 23, 2017.

61. Jason Pan, "All-Volunteer Military Plans Postponed," *Taipei Times*, August 27, 2015, <<http://www.taipetimes.com/News/front/archives/2015/08/27/2003626274>>, accessed November 2, 2016.

62. *Military and Security Developments Involving People's Republic of China 2017* (Washington, DC: Office of the Secretary of Defense, 2017): 82; *2017 Quadrennial Defense Review*: 60; Jason Pan, "Public Supports Compulsory Military Service: Survey," *Taipei Times*, April 21, 2015, <<http://www.taipetimes.com/News/taiwan/archives/2015/04/21/2003616440>>, accessed October 26, 2016.

63. Joseph Yeh, "Military Getting Flexible," *China Post*, December 21, 2016, <<http://www.chinapost.com.tw/taiwan/national/national-news/2016/12/21/487283/military-getting.htm>>, accessed July 12, 2017; *Annual Report to Congress*: 82.

64. Ian Easton, Mark Stokes, Cortez A. Cooper, and Arthur Chan, *Transformation of Taiwan's Reserve Force* (Santa Monica, CA: RAND, 2017): 6–8, 27–28; Cabestan, "Recent Changes," 349–50.

65. Michael Mazza, "Taiwan's Demographic Crunch and its Military Implications," *Global Taiwan Brief* 3:2 (2018), <<http://globaltaiwan.org/2018/01/24-gtb-3-2/#MichaelMazza012418>>, accessed April 16, 2018.

the three services and protecting key facilities from sabotage, but also in possible guerrilla warfare after conventional means fail.⁶⁶ In other words, a functional conscription system could provide a fourth layer of defense onshore when an anti-landing operation does not succeed. This extra layer would act as a further deterrent regarding the duration of warfare and the cost for the invader, as well as demonstrating the popular resolve to defend the country. For a small state under existential threat from a superpower, such preparation for armed citizens is not rare, as seen in the defense policies of Switzerland, Finland, and Austria. Although these European countries have a much lower level of external threat than Taiwan, their training periods are considerably longer, for both main and refresher courses.⁶⁷

Espionage by China presents a fundamental threat to all of Taiwan's military preparations, and there has been little sign of improvement in this area during the Tsai administration. Some espionage cases have been exposed since the inauguration, but this cannot be taken as an indicator of improved counter-intelligence work, and is just the tip of the iceberg.⁶⁸ Unconfirmed reports estimate there are about 5,000 Chinese spies in Taiwan, and this threat should not be underestimated.⁶⁹ A recent espionage case even involves politicians, suggesting that the problem is more than a military issue.⁷⁰ It is clear that the challenges noted above are exacerbated by the leaking of vital defense information.

The Tsai administration's policies regarding unconventional threats, economic dependence, and demographic movements have not yet shown a substantial impact. Despite the promotion of the New Southward Policy that develops more trade and investment to Southeast and South Asian countries in order to lower the dependence on China, Taiwan's economic dependence

66. Easton et al., *Transformation of Taiwan's Reserve Force*: 21–22.

67. *Military Balance 2017*: 91, 108, 164.

68. Aaron Jensen, "China Expands Its Spying against Taiwan," *The Diplomat*, March 21, 2017, <<http://thediplomat.com/2017/03/china-expands-its-spying-against-taiwan/>>; "Senior Officer in Alleged Espionage Once Headed Missile Command," *China Post*, May 10, 2017, <<http://www.chinapost.com.tw/taiwan/national/national-news/2017/05/10/497125/senior-officer.htm>> accessed July 23, 2017.

69. Chung Li-Hua and Jonathan Chin, "5,000 Chinese Spies in Taiwan: Source," *Taipei Times*, March 13, 2017, <<http://www.taipeitimes.com/News/front/archives/2017/03/13/2003666661>>, accessed July 23, 2017.

70. Jason Pan, "Spy Possibly Targeted Top Secret Army Unit: Reports," *Taipei Times*, January 6, 2018, <<http://www.taipeitimes.com/News/taiwan/archives/2018/01/06/2003685274>>, accessed January 8, 2018.

on China has not significantly altered.⁷¹ In fact, such a change, or the establishment of other economic ties that might reduce such dependence, would need decades of development; reshaping economic structures is neither easy nor quick. Beijing's broad economic influence puts further constraints on Taipei's engagement with Southeast Asian and South Asian countries, which at present is unofficial or semi-official. A bilateral free trade agreement with any of them would be difficult for Taiwan to achieve. Differences in culture and language are also obstacles for Taipei.⁷² As for Chinese investment in Taiwan, the capital amount has fallen slightly (by 2.2%) in Tsai's term to date, but the number of projects has increased considerably. The official data coming out of Beijing and Taipei are not compatible, making it difficult to identify the impact of Chinese investment in Taiwan.⁷³ However, if the current downturn of investment continues, China's portion may grow.⁷⁴ Therefore, Taiwan's economic insecurity in the face of China will not be solved during Tsai's tenure, even if she wins another term in 2020.

As for demographic movements, the trends are inconsistent. The number of Taiwanese tourists to China has risen continuously, and some surveys suggest increasing interest in residing in China for study and career, partially due to China's official policies. The number of Chinese visitors to Taiwan has dropped, per China's official limit, put in place since Tsai's inauguration.⁷⁵

71. Taiwan Institute of Economic Research, *Cross Strait Economic Statistics Monthly* No. 296 (June 2017): 2–2.

72. Cheng Ting-Fang and Tay Han Nee, "Taiwan's Tsai Makes Limited Headway with 'Southbound' Turn," *Nikkei Asian Review* (Tokyo, Japan), July 13, 2017, <<http://asia.nikkei.com/Politics-Economy/Policy-Politics/Taiwan-s-Tsai-makes-limited-headway-with-southbound-turn>>; "New Southward Policy' Must Entail Concrete Measures," *China Post*, May 21, 2016, <<http://www.chinapost.com.tw/editorial/taiwan-issues/2016/05/21/466818/new-southward.htm>>, accessed July 23, 2017.

73. Miao Tzung-han and Elaine Hou, "Taiwan, China at Odds over Investment Figures in First Half of 2017," *Focus Taiwan*, July 13, 2017, <<http://focustaiwan.tw/news/acs/201707130026.aspx>>, accessed July 24, 2017.

74. Liao Yu-yang and Frances Huang, "Approved FDI in Taiwan Shows More than 31% Drop," *Focus Taiwan*, July 22, 2017, <<http://focustaiwan.tw/news/aeco/201707220011.aspx>> "FDI Plummetts after Exceptional Year," *Taipei Times*, July 24, 2017, <<http://www.taipeitimes.com/News/biz/archives/2017/07/24/2003675159>>, accessed July 24, 2017.

75. National Immigration Agency, "Statistics"; Nicola Smith, "Taiwan Is Suffering from a Massive Brain Drain and the Main Beneficiary Is China," *Time*, August 21, 2017, <<http://time.com/4906162/taiwan-brain-drain-youth-china-jobs-economy/>>; "Taiwanese Willingness to Study, Work in China Hits Eight-Year High: Survey," *Asian Pacific Post*, December 19, 2017, <<http://www.asianpacificpost.com/article/8173-taiwanese-willingness-study-work-china-hits-eight-year-high-survey.html>>, accessed January 8, 2018.

This contrast reflects the distinct levels of governmental influence on the two sides of the Strait. As room for further demographic movement seems uncertain, it is likely that the robust economic integration in place, and the linguistic and cultural similarities, will generally drive the continued growth of bilateral demographic movement, particularly if Taiwan's economy does not significantly recover. And as long as the momentum of cross-Strait integration exists, and Taiwan does not take strict measures to control bilateral interactions, non-conventional security threats will not cease. Thus, the continued blooming of cross-Strait relations makes Taiwan vulnerable in both military and non-military matters.

CONCLUSION

Since its inauguration, the Tsai administration has responded to Taiwan's security threats mainly using two major approaches: investment in its indigenous defense industry for conventional military capabilities, and the New Southward Policy, which is aimed at diluting the force of cross-Strait integration. The two approaches have one thing in common: slowness. Moreover, the indigenous projects for arms are not sufficient for most defense needs, making foreign arms deals indispensable. The Trump administration has made some improvements in this regard but has not extended its deal list to sophisticated systems, such as fighters. At the same time, the transition to AVF has eroded the DPP administration's efforts to strengthen defense, with undermining of both regular and reserve units. In terms of alleviating cross-Strait integration, a major source for a range of unconventional threats, the international environment is not favorable for the New Southward Policy, and economic reshaping is too slow to enable a significant decrease in those unconventional threats. In sum, the Tsai administration has indeed brought greater attention to Taiwan's security and provided more resources than its predecessor, but the mentioned threats remain. It will be interesting to observe the effect of external and internal factors on Taiwan's security in the near future. Externally, as both Beijing and Washington have considerable influence on Taipei, in distinct ways, their future policies will be important. Internally, the coming elections in 2018 and 2020 have the potential to shape defense and related policies, and possibly even to reset them, if the government changes again in 2020.