CHAPTER THREE

The Evolution of Chinese Air Force Doctrine

Fingerprints of core warfighting concepts that were advanced by Mao Zedong in the 1930s are still found in PLA and PLAAF employment concepts today. "Active defense," which is regarded as China's military strategy, was formulated by Mao as part of his "people's war" concept and is basically a strategy of weakness.[1] This strategy of weakness persists even to the present, since it is necessitated by the fact that potential PRC adversaries tend to have superior weapons and equipment. At its most basic level, active defense involves "taking tactically offensive action within a basically defensive strategy."[2] The parameters within which this strategy can be implemented are broad and can fall between the "active" end of the spectrum and the "passive," reactive end. The original goal of this strategy was to protect the PRC's large cities and industrial bases by using offensive operations to wear down an aggressor (in contrast to "passive defense").[3] As Chinese military capabilities have improved over time, however, the active defense strategy has evolved from stressing the "defense" aspect to stressing the "active" aspect in the form of a more offensively oriented strategy.[4]

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1 Blasko, 2006, pp. 95–96; Allen, Krumel, and Pollack, 1995, p. 23.

2 Allen, Krumel, and Pollack, 1995, p. 24.

3 Allen, Krumel, and Pollack, 1995, p. 25; John W. Lewis and Xue Litai, "China's Search for a Modern Air Force," *International Security*, Vol. 24, No. 1, Summer 1999, p. 66.

4 Lewis and Xue, 1999, p. 81, provide the basis of this interpretation.

History

A major impetus for the PLA's emphasis on people's war and active defense strategies in the 1960s and 1970s was the belief among top PRC leaders not only that China's military was at a disadvantage in terms of weapons and equipment but that an invasion by the United States or Soviet Union was likely in the near term. Mao's fears of imminent global conflict in the 1960s and his advocacy of a strategy under which the tools of war would be manufactured in factories hidden in China's interior severely impeded the development of modern military capabilities.[5] Mao's perceptions also motivated violent political upheavals that occurred between 1958 and 1976. These events—the Great Leap Forward (1958), the Sino-Soviet split (1960), and the Cultural Revolution (1966–1976)—adversely affected the PLAAF's organizational and operational development.[6] After Mao's death in 1976, the net result of these political upheavals was a PLA that was weaker than it was in the 1950s, and one that stressed the defensive part of the active defense strategy more than the active part.

With the rise of Deng Xiaoping and attendant economic and political reforms in China in the late 1970s came a PLA strategy that was more attuned to Beijing's immediate military needs. Several milestones chart the PLA's important doctrinal evolution. In June 1985, the CMC declared that the likelihood of fighting a major, possibly nuclear, war was minimal and that China should instead concentrate its preparation on military conflicts along its periphery.[7] The shift in focus away from major conflict with great powers resulted in a rapid-reaction strategy based on the premises that China would be engaged only in local wars for the foreseeable future, that the PLA would need to strike to end the war quickly and meet political objectives, and that cost would be a big factor as equipment became more expensive to use

5 Lewis and Xue, 1999, p. 67.

6 Allen, Krumel, and Pollack, 1995, p. xvii.

7 Allen, Krumel, and Pollack, 1995, p. 29.

and replace.[8] Following the 1985 shift in strategy, Chinese military journals indicated five types of wars on which the PLA should focus:

> 1) small-scale conflicts restricted to contested border territory, 2) conflicts over territorial seas and islands, 3) surprise air attacks, 4) defense against deliberately limited attacks into Chinese territory, and 5) "punitive counterattacks" launched by China into enemy territory to "oppose invasion, protect sovereignty, or to uphold justice and dispel threats."[9]

The last of these is an obvious reference to China's incursion into Vietnam in 1979, and, as suggested by the second item, Britain's 1982 conflict with Argentina over the Falkland Islands undoubtedly also influenced the Chinese conception of likely future wars.

The 1991 Persian Gulf War sent shockwaves throughout China's military community and accelerated the PLA's modernization and shifts in strategy. The United States' overwhelming dominance in that conflict led Chinese military leaders to push for advanced military technologies. According to Allen, Krumel, and Pollack, China's National Defense University recommended that the PLA

> 1) reduce the number of soldiers and improve the armed forces' equipment, training quality, and actual combat capability; 2) give priority to conventional arms over nuclear weapons; 3) introduce high-technology, including advanced guidance systems, pinpoint accuracy bombing, weapons of mass destruction, and stealth aircraft; and 4) build a rapid-response force.[10]

Chinese military writings began stating that the PLA must be capable of winning "local wars under high-technology conditions" [高技术条件下局部战争]. In China's 2004 national defense white paper,

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8 Allen, 1997, p. 223.

9 Allen, Krumel, and Pollack, 1995, p. 29.

10 Allen, Krumel, and Pollack, 1995, p. 33.

this description was reformulated to "informationalized local wars" [信息化局部战争].[11]

This focus on high-technology warfare particularly emphasized airpower. Given that U.S. success in the Persian Gulf War was due in large part to overwhelming domination of the air, senior PLA leaders began to appreciate the implications of superior airpower.[12] The 1996 Taiwan Strait crisis and 1999 NATO operations over Kosovo further reinforced this appreciation, and China continues to digest the lessons learned from U.S. operations in Iraq and Afghanistan.[13]

Doctrine

Like the U.S. Air Force, the PLAAF was founded as part of China's army. However, unlike the USAF, which has developed employment concepts and doctrine independent of the U.S. Army's, the PLAAF's doctrine, despite progression since 1949, has struggled to move out of the army's shadow.[14] PLAAF doctrine has mostly evolved in step with that of the PLA ground forces. While the PLAAF was formally established on November 11, 1949, during these early years, "no consideration was ever given to making the air force a service independent of the army . . . because the PLA leadership did not want an autonomous aviation force."[15] Accordingly, the PLAAF's first commander and political commissar were chosen directly from the army.[16] The shadow cast

[11] Information Office of the State Council of the People's Republic of China, *China's National Defense in 2004*, Beijing, December 27, 2004. Subsequently, the English neologism *informationalized* has been reduced to *informationized*. See Information Office of the State Council of the People's Republic of China, 2006.

[12] Allen, Krumel, and Pollack, 1995, p. 32.

[13] Office of the Secretary of Defense, *Annual Report to Congress: Military Power of the People's Republic of China 2006*, Washington D.C.: U.S. Department of Defense, 2006, p. 5.

[14] Allen, 2002, p. 364. As discussed shortly, there are more-recent indications that the PLAAF is making headway toward becoming more of an independent service.

[15] Allen, Krumel, and Pollack, 1995, p. 37.

[16] Allen, Krumel, and Pollack, 1995, p. 35.

by the PLA over the PLAAF is evident in the early roles and missions of the Chinese air force. For example, the PLAAF's first operational mission in 1949—defending Beijing and Shanghai against Nationalist air raids—was defensive in nature.[17] Beginning in the early 1950s, one of the PLAAF's primary goals was to seize air superiority［夺取制空权］over the battlefield.[18]

The Korean War, battles over Taiwan's offshore islands, and the Vietnam conflict shaped the evolution of China's air force employment concepts, and the tempo of air and space power growth. During the Korean War, the PLAAF's original air plan was to support ground troops as its primary mission, a reflection of the PLA Army's influence on Chinese air strategy.[19] The PLAAF was unable to execute this strategy because of various technical limitations and had to change its mission to that of conducting air operations against U.S. forces. This, in turn, helped the PLAAF develop basic air defense strategy and tactics.[20]

Air operations against Nationalist forces on Taiwan's outlying islands of Yijiangshan and Jinmen (the latter also known as Quemoy or Kinmen) in the late 1950s also helped to shape Chinese air force employment concepts. The Yijiangshan Island campaign of 1954–1955 is the only campaign in PLA history to have involved combined air, ground, and naval operations.[21] The PLAAF's goals were to achieve air superiority, attack Taiwanese resupply ships, conduct decoy and reconnaissance missions, and provide direct air support for landing operations.[22] Lessons learned from the Yijiangshan Island campaign were to resonate in subsequent PLAAF strategy and employment concepts and

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17 Allen, Krumel, and Pollack, 1995, p. 101.

18 Allen, 2002, p. 370.

19 Zhang Xiaoming, "Air Combat for the People's Republic: The People's Liberation Army Air Force in Action, 1949–1969," in Mark A. Ryan, David Michael Finkelstein, and Michael McDevitt, eds., *Chinese Warfighting: The PLA Experience Since 1949*, Armonk, N.Y.: M. E. Sharpe, 2003, pp. 271–272.

20 Zhang Xiaoming, 2003, pp. 271–272.

21 Zhang Xiaoming, 2003, p. 279.

22 Zhang Xiaoming, 2003, p. 280.

include a "relentless use of an overwhelming striking force to attack enemy artillery and firepower positions as well as command and communication centers."[23] Chinese military leaders also learned that they could overcome the short ranges and limited loiter times of their fighter jets by using the numerical superiority of PLAAF fighters to maintain continuous fighter patrols.[24] The third lesson was that, while attack sorties should be flown according to plan, commanders should allow flexibility "in target selection based on the need of ground forces."[25] In sum, the Yijiangshan experience reflected the PRC's concept of airpower's role in a local conflict.[26] In terms of PLAAF campaign theory, emphasis was placed on "air defense first, followed by air superiority, and then offensive air support."[27]

The Jinmen campaign of 1958, the most recent Chinese military conflict to truly involve air combat, was also an important shaper of PLAAF strategy and employment concepts. Among others, the conflict provides an example of how air operational principles were governed by rules from the very top—the CMC.[28] According to Zhang Xiaoming, these operational principles of the CMC stressed

> (1) using overwhelming force to achieve protection of forces and destruction of enemy forces; (2) subservience of military battles to political battles by a strict adherence to CMC operational policy; and (3) study and application of PLAAF experiences and tactics drawn from the Korean War.[29]

Because the PRC leadership was uncertain about the PLAAF's counterstrike capabilities vis-à-vis Taiwan, PLAAF doctrine remained defensive. Thus, it "deployed large numbers of fighters to the region

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[23] Zhang Xiaoming, 2003, p. 282.

[24] Zhang Xiaoming, 2003, p. 282.

[25] Zhang Xiaoming, 2003, p. 282.

[26] Zhang Xiaoming, 2003, p. 282.

[27] Zhang Xiaoming, 2003, p. 282.

[28] Zhang Xiaoming, 2003, p. 283.

[29] Zhang Xiaoming, 2003, p. 284.

but could not capitalize on its numerical superiority," since it had to retain half of its aircraft to protect home bases.[30] In addition to political concerns of not wanting to escalate the Jinmen campaign into an international crisis, the limited range of Chinese MiG-17 aircraft also limited the operational capabilities of the PLAAF.[31]

Aside from battle experience as a determinant and molder of strategy and doctrine, political upheavals in the communist regime also had profound effects on the evolution of Chinese air force doctrine. Beginning with the Sino-Soviet split in the 1960 and followed by the Cultural Revolution, which festered until 1976, Chinese airpower, and the ability to execute its strategy and doctrine, atrophied. The Sino-Soviet split's primary effect on the PLAAF was to significantly slow modernization efforts, as China was highly dependent on Soviet technology transfers for equipping the PLAAF.[32] And, due to the fact that an air force is, by its very nature, a more technically oriented service than the army, the PLAAF suffered greatly during the Cultural Revolution, which eschewed anything having to do with intellectualism and expertise. Furthermore, the PLAAF's association with Defense Minister Lin Biao's failed coup attempt against Mao in 1971 resulted in it being marginalized until after Mao's death and the rehabilitation of Deng Xiaoping in 1978.[33] Partly as a consequence, PLAAF involvement during China's war with Vietnam in 1979 was limited. As in the case of the Jinmen conflict, China's air involvement during the conflict was constrained both by political factors—not wanting to involve the United States in the former case and the Soviet Union in the latter—and by the limited capabilities of the PLAAF.

Deng ushered in a new era of economic and military reform, which set all military services on a path to modernization and reform. Indeed, after Deng took control of the CMC and later became China's undisputed leader in 1978, he "elevated his perspective on airpower

[30] Zhang Xiaoming, 2003, p. 288.

[31] Zhang Xiaoming, 2003, p. 288.

[32] Allen, Krumel, and Pollack, 1995, p. 71.

[33] Allen, Krumel, and Pollack, 1995, p. 73.

to official CMC dogma."[34] This perspective viewed the pursuit of air superiority as crucial to Chinese military power and winning future wars.[35]

The actual implementation of Deng's directives on Chinese airpower modernization, however, was constrained during most of his tenure as China's paramount leader, for two major reasons. First, by attaching special political weight to the PLAAF, Deng not only wanted to alleviate the decrepit state of Chinese airpower; he also wanted to keep tight control over the PLAAF so as to prevent it from becoming the politically dangerous service it had been under Lin Biao during the Cultural Revolution.[36] Second, the army-centric mentality ingrained during the Mao era attenuated efforts to implement near-term improvements in the PLAAF.[37] For example, when the PLA began reorganizing ground forces into group armies in the early 1980s, the PLAAF was given guidance that its role was to support the needs of ground forces and that a victory was a ground force victory.[38]

The Gulf War of 1991 spurred renewed debate within the PLAAF and Chinese military establishment about how to modernize and develop Chinese airpower. The U.S. show of force in the Taiwan Strait crisis of 1996, in which the United States deployed two aircraft-carrier battle groups near Taiwan in response to Chinese military intimidation of Taiwan, further motivated doctrinal reform and technological modernization efforts in the PLAAF. The PLAAF's desire for a strategy of "quick reaction," "integrated coordination," and "combat in depth" had to be operationalized.[39] *Quick reaction* meant launching an instan-

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[34] Lewis and Xue, 1999, p. 70.

[35] Lewis and Xue, 1999, p. 70.

[36] Lewis and Xue, 1999, pp. 70–71. Because of these constraints, the PLAAF remained subservient to the PLA's and other strategic priorities.

[37] Lewis and Xue, 1999, p. 74. The Mao-era dogma of self-reliance was relaxed to permit acquisition of foreign air-launched weapons and avionics. Only the purchase of foreign aircraft remained prohibited.

[38] Lanzit and Allen, 2007, pp. 439–440.

[39] Lewis and Xue, 1999, p. 79.

taneous retaliatory strike for deterrence, or even survival.[40] *Integrated coordination* meant allowing the air force to "manage the long-range bomber air groups and oversee the initial stages of joint operations with the other services and between air combat units stationed in different military regions."[41] Finally, *combat in depth* meant conducting operations over a wide geographical area.[42] However, operationalizing these concepts was difficult because, during the early 1990s, military reform tended to stress internal organization and structural changes, as opposed to training and equipment modernization.[43] The PLAAF lacked the equipment and training needed to implement this strategy.[44]

In the 1990s, PLAAF employment concepts assumed that future wars would be conducted according to an active defense strategy with three phases: "strategic defense, strategic stalemate, and strategic counterattack.".[45] Still under the umbrella of active defense, PLAAF campaigns were divided into two categories—defensive campaigns and attack campaigns—either of which could be one of two types: independent air force campaigns, and air force campaigns part of a joint campaign.[46] PLAAF publications also specified three levels of scale for an air defense campaign, with small campaigns requiring air defense of a strategic position, large campaigns requiring air defense of a battle area, and larger campaigns requiring air defense of many battle areas.[47]

A PLAAF study published in 1990 revealed both the desire to have a more unified air strategy, and the gap between desired strategy and the ability to implement it. For example, one challenge to execution of the aforementioned rapid-reaction strategy was the lack of a

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[40] Lewis and Xue, 1999, p. 80.

[41] Lewis and Xue, 1999, p. 80.

[42] Lewis and Xue, 1999, p. 80.

[43] Allen, Krumel, and Pollack, 1995, p. 105.

[44] Allen, Krumel, and Pollack, 1995, p. 109.

[45] Allen, Krumel, and Pollack, 1995, p. 111. These phases are clearly based on Mao's writings and the PLA's experience in the Chinese civil war.

[46] Allen, Krumel, and Pollack, 1995, pp. 111–112.

[47] Allen, Krumel, and Pollack, 1995, p. 112.

unified air defense plan in the PRC.[48] Since each service possessed its own air defense forces, and coordinating the different elements *within* each service was challenging enough, it was virtually impossible to coordinate operations across services.[49]

Other dimensions of the PLAAF's strategy included two principles: "light front, heavy rear" [前轻后重] and a "deploying in three rings" concept.[50] The "light front, heavy rear" principle stemmed from the PLAAF's responsibility to protect airfields, "national political and economic centers, heavy troop concentrations, important military facilities, and transportation systems," and resulted in most fighter airfields, and almost all SAMs, being concentrated around China's large cities—most of which are at least 200 km from China's nearest borders.[51] Under "light front, heavy rear," the PLAAF "would organize its SAM and AAA forces into a combined high, medium and low altitude and a far, medium and short distance air defense net."[52] Intercept lines and aviation forces would also be organized into a series of interception layers.[53] However, in executing this concept, the PLAAF faced two daunting challenges: the limited range of PRC aircraft, and adversaries that had aircraft capable of conducting deep strikes into Chinese territory.[54] The limited range of PLAAF aircraft was worsened by the fact that most airfields and almost all SAMs were concentrated near China's large cities, far away from China's borders.[55] For the "light front, heavy rear" principle to work, moreover, the PLAAF needed to develop a better command-and-control system; otherwise, there was a risk of fratricide to friendly aircraft from SAMs and AAA.[56] Finally, because

48 Allen, Krumel, and Pollack, 1995, p. 113.

49 Allen, Krumel, and Pollack, 1995, p. 113.

50 Allen, Krumel, and Pollack, 1995, pp. 114–115.

51 Allen, Krumel, and Pollack, 1995, p. 114.

52 Allen, Krumel, and Pollack, 1995, p. 114.

53 Allen, Krumel, and Pollack, 1995, p. 114.

54 Allen, Krumel, and Pollack, 1995, p. 115.

55 Allen, Krumel, and Pollack, 1995, p. 114.

56 Allen, Krumel, and Pollack, 1995, pp. 114, 116, 124.

of equipment and command-and-control limitations, the most challenging problem for PLAAF was the task of ground-force support.[57]

To be used in conjunction with the "light front, heavy rear" principle, "deploying in three rings" involved organizing a small quantity of interceptors, AAA and SAMs "as a combined air defense force into 'three dimensional, in-depth, overlapping' firepower rings."[58] Furthermore, according to Allen, Krumel, and Pollack,

> Each weapon system would be assigned a specific airspace to defend—high, medium or low. In-depth rings means assigning each weapon system a specific distance from the target to defend—distant, medium or close. Overlapping rings means organizing each weapon system into left, middle or right firepower rings facing the most likely avenue of approach.[59]

In 1993, after the Gulf War, 60 airpower specialists formed an airpower theory, strategy, and development study group to investigate independent air campaigns.[60] According to one study, by 1997, the Chinese air force had "claimed precedence over the other service branches, and the People's War as a unifying dogma had given way to service-specific strategies."[61]

According to another study, as of the late 1990s, the primary PLAAF missions were air coercion, air offensives, air blockades, and support for ground force operations.[62] Coercion could come in the

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[57] Allen, Krumel, and Pollack, 1995, p. 118.

[58] Allen, Krumel, and Pollack, 1995, p. 115.

[59] Allen, Krumel, and Pollack, 1995, pp. 115–116.

[60] Stokes, 2005, p. 246.

[61] Lewis and Xue, 1999, pp. 89–90.

[62] Stokes, 2005, p. 247. The Chinese term for coercion, *weishe* [威慑], is translated by many analysts, including Stokes, 2005, as *deterrence*. As Stokes himself argues, however, *weishe* actually encompasses both deterrence, as it is normally understood, and *compellence*—forcing an adversary to do something it would not otherwise wish to do. The more accurate translation of *weishe*, therefore, is *coercion*, which, in Western strategic writings, also includes both deterrence and compellence. Stokes, 2005, p. 247, also uses the term *air strikes* rather than *air offensives*. In other parts of this monograph, however, we translate the Chinese term

form of demonstrations, such as deployments and exercises, weapon tests, or overflights. It could also come in the form of limited strikes to warn or punish an adversary. Air offensives, by contrast, would entail large-scale strikes with the goal of rapidly gaining air superiority, reducing an adversary's capacity for military operations, and establishing the conditions necessary for victory. An air blockade would entail attacks on airfields and seaports as well as air, land, and sea transportation routes with the goal of cutting an enemy off from contact with the outside world. Support for ground force operations would include attacks on logistics facilities, hardened coastal defenses (in the case of an amphibious operation), reinforcements, and key choke points, such as bridges. It would also include battlefield close air support, strategic and theater airlift, airborne operations against command headquarters, and the deployment of ground-based air defenses to protect ground forces and key facilities.[63]

According to Stokes, as of the late 1990s, PLAAF operational principles included "surprise and first strikes," "concentration of best assets," "offensive action as a component of air defense," and "close coordination." *Surprise and first strikes* refers to the goal of crippling an opponent and gaining the initiative early in a conflict through surprise and large-scale attacks on key targets, such as the enemy's air command-and-control structure, key air bases, and SAM sites. *Concentration of best assets* supports this principle and refers to using the PLAAF's best assets in the initial strikes and to dedicating the majority of them to targets that will have the most influence on a campaign. *Offensive action as a component of air defense* refers to using offensive counter–air attacks as an integral aspect of air defense by attacking those enemy assets that pose the greatest threat. *Close coordination* refers to coordinating the air assets of all services (Army, PLAN, PLAAF,

to which he is referring, *kongzhong jingong* [空中进攻], as *air offensives*. (We translate other Chinese terms, such as *kongzhong tuji* [空中突击] or *kongzhong daji* [空中打击], as *air strikes*.) For consistency and accuracy, therefore, we use *air offensives* here instead of Stokes's *air strikes*.

[63] Stokes, 2005, pp. 247–250.

Second Artillery), as well as unified command at the theater level.[64] As seen in Chapters Four through Eight, these principles remain key elements of PLAAF employment concepts.

A major change in PLAAF doctrine occurred in 1999, when it revised its campaign guidance [纲要], which "provides the classified doctrinal basis and general guidance for how the PLAAF will fight future campaigns."[65] Since the guidance is classified, its exact contents are unknown. What Western analysts do know is that the guidance shows that the PLAAF had deepened its understanding of the operational level of war. The PLAAF was also now tasked with preparing for three types of air force campaigns: air offensive, air defense, and air blockade.[66]

Until 2004, the PLAAF lacked its own, service-specific strategy, and the actual ability of the PLAAF to integrate its campaign and operational principles with the Second Artillery, PLA Army, and PLAN was questionable. One study states that, until that time, the Chinese air force relied "almost solely on the PLA Army's 'Active Defense' operational component as its strategic-level doctrinal guidance."[67] The approval of the PLAAF's active defense strategy as a component of the National Military Strategic Guidelines for air operations in 2004, however, indicated an important shift in the PLAAF's status.[68] The PLAAF's strategic component of the National Military Strategic Guidelines is now identified as "'Integrated Air and Space, Simultaneous Offensive and

[64] Stokes, 2005, pp. 250–254.

[65] Allen, 2005b, p. 3.

[66] Allen, 2005b, p. 4. These were three of 22 different types of campaigns identified by the PLA. The remaining 19 campaigns include five ground force campaigns (mobile warfare, positional offensive, urban offensive, positional defensive, and urban defensive); six naval force campaigns (sea blockade, sea lines of communication destruction, coastal raid, antiship, sea lines of communication defense, and naval base defense); two Second Artillery campaigns (nuclear counterattack and conventional missile campaigns); and six joint service campaigns (blockade, landing, anti–air raid, border counterattack, airborne, and antilanding).

[67] Lanzit and Allen, 2007, p. 448.

[68] Lanzit and Allen, 2007, pp. 450–451.

Defensive Operations' [空天一体，攻防兼备]."[69] While it does not appear that the PLAAF yet has a service-specific strategy that is as well defined as that of the PLAN—that of offshore defense—it does seem that the PLAAF is now seen as a truly independent service. The same study cites Hong Kong press reports stating that the PLAAF should be a strategic air force that stands "side by side" with the Chinese army and navy "to achieve command of the air, ground, and sea."[70]

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[69] Yao, 2005, p. 57, quoted in Lanzit and Allen, 2007, p. 450.

[70] Lanzit and Allen, 2007, p. 451.