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The Tiananmen Incident: A Preliminary Look at its Impact on S&T Modernization in China (C NF)

Summary

Beijing's crackdown on prodemocracy demonstrators in June has shaken China's scientific community and strained China's science and technology relationships with the outside world. To counteract both domestic and foreign disaffection, Beijing is apparently relying on intimidation and increased military and political control to keep its scientists in line, and has been encouraging— Western firms to return to China. Beijing has already had some success.

At the same time, Beijing will probably hedge its bets and stress self-reliance while seeking alternative sources of technology.

Beijing, however, may have underestimated the impact of the Tiananmen incident on its own scientific community. If hardline policies persist—or get worse—we expect passive resistance, defections, and the

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number of overseas Chinese students electing to remain in their host countries to increase. This guarantees that Beijing's shortage of trained scientists will continue and, in our judgment, seriously set back China's aspirations for S&T modernization. At the same time, new caution among Western investors will slow China's attempts to acquire and absorb new technology.

Supporting Science and Democracy in China

Members of China's S&T establishment played a major role in the demonstrations for democracy that erupted this spring. In the media reports indicates that students from almost all the key S&T departments and universities in China participated in the demonstrations in Beijing and provincial cities. In fact, six of the 21 student leaders on Beijing's "most wanted" list are young scientists. In addition, hundreds of researchers from local and national scientific institutions joined the demonstrations, including a large group from the Chinese Academy of Sciences. Fang Lizhi, the Chinese astrophysicist currently being sheltered at the US Embassy in Beijing, is a prominent symbol of dissent among Chinese intellectuals and a longtime and vocal critic of the regime.

heavyhanded attempts to bring the scientific community under control, moreover, are likely to deepen the disillusionment with the regime:

 The Chinese press indicates that some scientific and technical personnel were detained or arrested over the summer and others dismissed from their posts.
 According to Chinese press reports, the University of Science and Technology in Anhui dismissed at least one professor for his support of the prodemocracy movement.

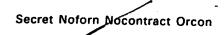
The International S&T Community Reacts

China's relationship with the foreign S&T community has also suffered.

published Chinese statistics, more than 3,000 foreign delegations with 17,000 members visited Chinese research institutes in 1987 alone. But the crackdown has strained many of these exchanges:

- Hundreds of world-class scientists of Chinese descent who have enthusiastically assisted in China's S&T modernization may now be reluctant to help Beijing. The 1,000-member Chinese American Physics Society, for example, harshly criticized the crackdown.
- Thousands of foreign technical experts evacuated China, and only a handful have returned.

The absence of these—and other technical personnel—will delay technology transfer projects and slow the acquisition of foreign technical know—how by Chinese S&T personnel.

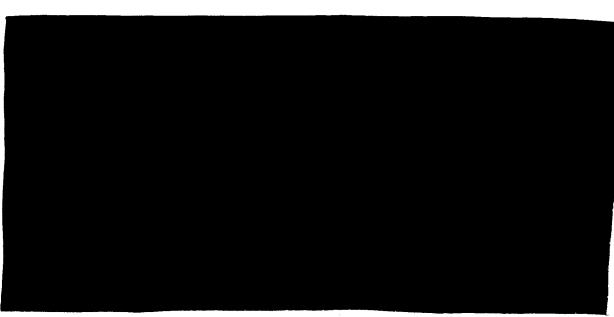


Beijing Moves To Regain the S&T Initiative

While Beijing is tightening ideological control over its scientists, we believe that the Chinese leadership is also taking steps to reassure the scientific community:

- Chinese officials have vociferously proclaimed that the "open-door" policy remains in effect and have stated that they continue to welcome visits by foreign scientists and technicians.
 - China, for instance, is for the first time inviting Western planners to a symposium in Beijing this December to discuss China's overall S&T development policy.
- The Chinese are trying to entice US scientists, in particular, to return to China.
 Deng Xiaoping's decision to meet with US Nobel Prize winner T. D. Lee in September probably was an attempt to win back US scientific support for China's reorganization.

Beijing has had some success encouraging the continued flow of Western technology and know-how to China. Despite Western sanctions on the sale of military and strategic high technology to China, the sale of commercial technology to Beijing has continued:



Beijing appears confident that international aid will resume, that commercial technology dealings with the West will pick up, and that Western sanctions—even for the sale of military technology and equipment—will ease. Nonetheless, we believe the Chinese will hedge their bets by reemphasizing self-reliance while actively seeking alternative sources of technology:

the Chinese media is playing up the achievements of China's defense scientists, who were able to develop sophisticated weapons technology despite the withdrawal of Soviet technical experts in the 1960s. In our view, Beijing is warning its scientists that they must be prepared to develop the country's S&T infrastructure with less Western assistance.

- The Chinese may increasingly turn to the Soviet Union and Eastern Bloc for selected technologies in such areas as aerospace and nuclear energy, accelerating the dramatic expansion of S&T exchanges with the Soviet Bloc over the past few years.
- Beijing will probably also expand its S&T ties with other developing nations.



Uncertain Prospects in the Long Run

We believe, however, that Beijing may be underestimating the impact of the Tiananmen incident on the Chinese scientific community. In the short-term, the climate of fear and uncertainty that the crackdown has generated will disrupt the Chinese scientific community and could increasingly lead to work slowdowns or even sabotage in the laboratory.

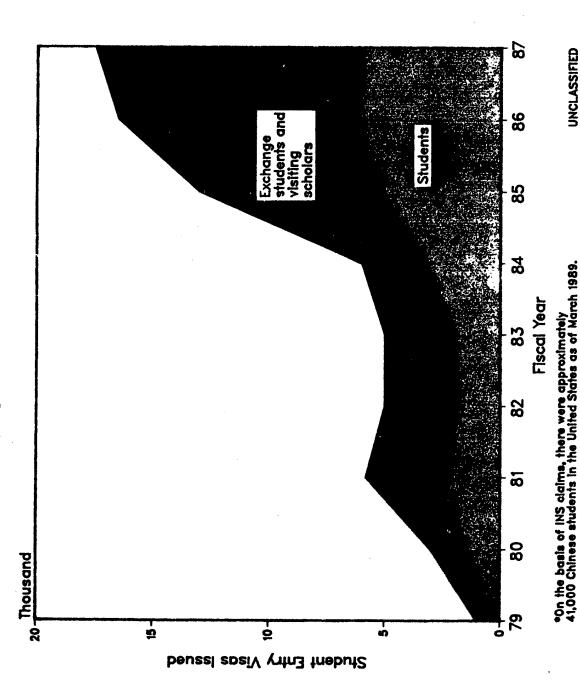
If Beijing's repressive policies persist or if its attitude toward China's scientists hardens—returning to an atmosphere reminiscent of the Cultural Revolution where intellectuals were blamed for many of China's woes—passive resistance and other acts of defiance may become more common. We expect, for example, the number of Chinese defectors and refugees to increase. Zhao Fusan, a deputy director of the Chinese Academy of Social Sciences, and Wan Runnan, head of the high-technology Stone Group in Beijing, have already defected, and mathematicians, physicists, and other natural scientists have also applied for refugee status.

The already serious problem of students not returning from overseas study is also likely to get worse.

Australian press reported that almost 10,000 of the 10,600 Chinese students in that country have inquired about staying in Australia after their student visas expire. We believe that Beijing's decision to publicize the return of a Chinese researcher from Australia this month reflects China's mounting concern.

Finally, although China's technology dealings with the West are likely to resume—barring new, major incidents that destabilize the country—we believe foreign companies are likely to be more cautious with their investments and contacts with the Chinese. Companies that were once willing to invest in unprofitable ventures in an attempt to gain a foothold in the Chinese market are now more likely to make decisions

Chinese Studying in the United States, 1979-87*



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on the basis of profitability.

The perpetuation of China's hardline policies—coupled with the loss of so many trained personnel and Beijing's penchant for inefficiently utilizing its returned students—guarantees that China's shortage of trained scientists will persist and, in our judgment, deal a serious blow to China's aspirations for S&T modernization. Moreover, Beijing is paying more for the international loans that it now obtains, which—together with the new caution on the part of Western firms—is likely to slow technology acquisition and absorbtion for the next few years.