Asia-Pacific
Economic Update, 2010

Volume 3

Essays: Potentially Destabilizing Economic Conditions in AOR Economies

Brooks Robinson

Foreword

Welcome to the *2010 Asia-Pacific Economic Update* (*APEU*). The focus of this edition is to present historical data, analyses, outlooks, and research that enable the identification of potentially destabilizing economic conditions in the U.S. Pacific Command's (USPACOM) area of responsibility (AOR). As you know, USPACOM has a mandate to provide security and to help ensure stability in the Asia-Pacific region. While a significant proportion of USPACOM efforts to fulfill its mandate are military in nature, a broad range of strategies are employed to help USPACOM achieve its goals. An important assumption that underpins USPACOM strategies is that economic growth and prosperity help produce a stable environment—political, social, and military. The APEU informs USPACOM leadership and staff and the broader community of interest concerning past, ongoing, and prospective future economic conditions, and infers how AOR economic conditions are likely to impact USPACOM efforts to achieve its goals.

Volume 1 provides high-level coverage of 36 nations plus special territories in the AOR. It presents detailed historical data tables for the 16 largest economies, along with analysis of recent economic developments and a summary of the economic outlook for the year ahead. For the remaining AOR economies for which detailed data are sparse, fundamental economic features are reflected through condensed statistical tables.

Volume 2 is a lexicon of economic terms with which non-economist are likely to require assistance during their pursuit of AOR economic analysis. It remains largely unchanged from the 2009 edition. However, a few new terms appear, statistical examples have been updated, and the text has been adjusted to increase accuracy and clarity.

Volume 3 provides short papers that cover four distinct topics. Each paper addresses potentially destabilizing economic issues in the AOR. Two of the papers were prepared by authors who have no direct organizational links to *APEU* preparers. Consequently, the volume provides an expanded view of economic thinking about AOR issues. The remaining papers were prepared by the USPACOM Economic Advisor; they reflect the types of topics that are entertained on a day-to-day basis at USPACOM.

We hope that the 2010 APEU serves you well, and that you will refer to it often during the coming year. We invite questions and comments. They will assist us in improving the quality, efficacy, and functionality of future APEU editions. Please transmit your questions or comments to brooks.robinson@pacom.mil; alternatively, you may telephone +1.808.477.9195.

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Introduction

This is the inaugural version of Volume 3 in the series of *APEUs*. Our plans are to dedicate each annual version to a different topic. For 2010, we focus on "potentially destabilizing economic conditions in the U.S. Pacific Command's area of responsibility (AOR)." Consequently, we provide four papers in this volume that cover this topic from different perspectives. The first paper highlights the potentially destabilizing economic conditions that could surface should China fail to rebalance its economy toward greater domestic demand. The second paper concerns the importance of foreign direct investment (FDI) and the implications associated with reduced FDI flows into Association of Southeast Asian Nations' economies. The third paper discusses the role of U.S. foreign assistance (FA) in selected Southeast Asian economies and how the discontinuation or reduction in FA flows could impact adversely conditions in those economies. The final paper explores economic strategies that can minimize the effects of a U.S.-China military conflict.

Preparers of the 2010 APEU solicited four papers for this volume. Two of the papers were presented at a seminar on May 12, 2010. The two authors of these papers, Thomas Woodrow and Olga Bogach, presented their paper to an audience of nearly 60 PACOM officers and staff members. Commander Dominick Strada provided opening remarks for the seminar.

From left to right: CDR Dominick Strada, Director USPACOM
CAG; Olga Bogach; Thomas Woodward; and Brooks Robinson

Given their emphasis on potentially destabilizing economic conditions and on Southeast Asia and China, the papers that are presented in this volume should provide readers with an excellent framework for considering potential contributors to economic instability within the AOR.

We invite you to review these papers with focused interest, and to use the information that is provided during planning efforts for AOR economies. If you would like to suggest a topic for the 2011 Volume 3; write to brooks.robinson@pacom.mil.

"Can China Create a Domestic Demand Economy?"

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Abstract

This paper highlights China's current positive position in the global economic order and links China's current economic success to future structural and demographic changes that must be addressed by sound planning. We conclude that China's failure to rebalance its economy away from an export-led growth model and toward a domestic-demand-led growth model could produce future economic instability in the country.

Thomas Woodrow delivering his presentation
during the 2010 APEU Seminar.

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[1]Since 2003, Thomas Woodrow has served as an analyst in PACOM's Joint Intelligence Operations Center (JIOC). At the time of the APEU 2010 Seminar, he held the position of Senior Intelligence Analyst for China.

Overview

Chinese economists are debating whether the time is right for the central government to make a major push to expand domestic demand specifically to move the PRC away from an export-led growth model toward a domestic-demand-based growth model. While China has had a long-term goal of creating conditions for a more balanced economy, and to eventually move away from a strong dependence on exports, the emergence of the Chinese economy from the global financial meltdown in a strong position appears to have stimulated recent policy debates concerning rebalancing the economy on an accelerated basis.

Chinese observers universally acknowledge that domestic demand accelerated in 2009 due to massive government spending, but disagreement exists whether this has created conditions for a self-supporting cycle of increasing domestic demand. A strong strain of nationalism appears in many commentaries favoring moving to a domestic-demand economy; some articles exhibit the darker side of nationalistic sentiment which, under certain conditions, could propel China to consider asserting its economic prowess to a much larger extent than it does currently.

In all likelihood, Beijing will continue its current export promotion policies when it is deemed necessary in order to ensure continued growth of export industries, while at the same time striving to play an enhanced role as a responsible world economic power. However, the Chinese Communist Party's demonstrated willingness to embark on rapid and wide-spread economic and social change in order to protect the Party's political monopoly should not be ruled out. This is more likely if the Party believes that it is threatened by non-state-controlled economic actors.

Regardless of the outcome of China's policy debate on whether to shift from an export-led growth model to a domestic-demand model, the sheer weight of the impact of a rapidly expanding Chinese middle class has major implications for China's economy, for the region, and for global resources. China's urban population will increase by 350 million over the next 20 years – more than the entire current population of the United States. If most of these residents aspire to a Western lifestyle, complete with private automobiles, an abundance of consumer products, foodstuffs, and conspicuous consumption, the environmental, social and political consequences will be far-reaching and will impact and stress the world's resources.

Rise of the Middle Kingdom

China's phenomenal economic growth since Beijing instituted economic reforms in the early 1980s produced a large positive impact on China's, the region's, and the global economy over the past five years. In 1980, the PRC's economy was ranked number eleven globally; in 2010 China surpassed Japan to become the second-largest economy after the United States. In the process of becoming an economic powerhouse,

China has amassed the world's largest foreign exchange reserves (estimated at some $2.5 trillion) and is currently the largest holder of U.S. debt securities.[2,3,4]

China's Economy by the Numbers		
	1999	2009
PRC GDP	$1.0 trillion	$4.75 trillion
PRC GDP per capita	$861	$3,600
Oil Import Growth	5.0%	28% (Jan. 2010)
Largest Bank	U.S.	China
Foreign Exchange	$200 billion	$2.5 trillion
Largest Holder of U.S. Debt	Japan	PRC

The importance of the Chinese economy within East Asia is reflected by the centrality that the PRC now plays as a demand market for commodities and finished or semi-finished goods and as an exporter of a wide range of consumer goods. China has become the largest trade partner with key U.S. allies, including Japan, South Korea, Australia and Thailand. The Free Trade Agreement (FTA) signed with the Association of Southeast Asian Nations (ASEAN) was initiated at the beginning of 2010; this FTA with ASEAN promises to make China the dominant economy in East Asia. By 2008, the combined GDP of ASEAN had grown to $1.5 trillion; when combined with China's $5.0 trillion economy, it is clear that the combined ASEAN-PRC economies can be a major source of global economic growth for the foreseeable future.[5,6]

The recognition of the growing importance of the Chinese economy was a major reason for the replacement of the Group of 8 with the Group of 20 in 2009. This, in addition to allowing China key positions in the World Bank and the International Monetary Fund (IMF), gives Beijing major new roles in with which it can influence global economic issues.

Over the past five years, the continuing rapid rise of Chinese demand has had a major impact on global commodities and consumer markets, affecting a wide range of markets from iron and oil (China bypassed the U.S. to become the primary customer for Saudi crude in 2009) to cars (China also has become the number one automobile market, displacing the U.S. from its long-held position) and luxury goods.[7] While the economic downturn in U.S. and EU economies following the late 2008 financial crisis resulted in a deep recession, China emerged unscathed and in a much stronger global position than it occupied before the crisis. This leading position in global economic growth has turned all eyes toward China.

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[2] *Financial Times.* (2009). "China's Hoards." July 16.
[3] Ahmad, Sameena. (2009). "China Goes Shopping." *Financial Times. October 16.*
[4] Financial Times. (2009). "GDP Chart." December 30.
[5] Wikipedia entry for ASEAN GDP.
[6] Op. cit. *"GDP Chart." (Financial Times).*
[7] Waldmeir, Patti. (2010). "Chinese Carmakers in Great Leap Forward to Luxury." *Financial Times.* April 24.

An Export-led Economy

The path to China's success lies in its blueprint – originally mapped out by former Communist Party leader Deng Xiaoping – to take advantage of China's 1.3 billion population and low labor costs to achieve export economies of scale. A key component of this plan was the maintenance of good political and economic relations with the United States. While the political dynamic between Beijing and Washington has waxed and waned from the Cold War era (when China was a de facto U.S. ally against the Soviet Union), to post-Tiananmen, the Belgrade embassy bombing, and the 2001 EP-3 incident off Hainan Island, the economic relationship has remained relatively constant, with China providing the U.S. with ever increasing amounts of cheap consumer goods and acquiring gradually higher levels of foreign exchange, technology and management expertise in return.

Over the past decade, China has moved up the value-added chain into the production of higher technology – especially computers – and other complex manufacturing such as automobiles. In the process, some of the low-cost labor intensive manufacturing has been outsourced to other regional nations such as Vietnam and Indonesia. The rapid rise in income for the average Chinese worker – a key component of Communist Party planning to maintain social stability – has had the effect of pricing out some Chinese manufacturing to lower-cost areas. Beijing is aware of this and has adopted a policy of redirecting investment into China's interior as opposed to out of the country, but the policy has had only limited success as many export firms are foreign owned.

Increasing Domestic Demand

Through all of this, the model for Chinese economic development was centered on an export-centric economy. While some Chinese economists believed that the PRC could at some point achieve sufficient domestic demand to consider moving away from the export model (indeed, this has been an official policy goal for at least a decade) most have viewed this as a long-term goal—not a realistic policy option.[8] However, in the past few years, a number of factors – the global recession, the impact of a growing middle class, and a desire to limit the political consequences of dependence on exports to the U.S. – have stimulated a debate within China on whether economic planning should shift towards a domestic-demand model of development.

This debate also has been partly stimulated by the success of the Chinese in propelling domestic demand to forestall recessions, which beset other global economies following the financial sector meltdown in late 2008 and early 2009. Social stability remains the primary goal and chief bugaboo of the ruling Communist Party leadership. Concerned with the prospect of mass unemployment following a steep falloff in export markets, Beijing ordered its banking sector to loan prodigious amounts of money for domestic infrastructure projects to sop up unemployed workers. This policy has achieved a great success in maintaining employment (Beijing's primary goal) even though it has resulted

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[8]Zhiwu, Chen. (2010). "Dichotomy of Government and People's Income." *Beijing China Daily* Online *(English)*. April 27.

in an overexpansion in some areas, particularly real estate markets, creating the potential for asset bubbles and rapid inflation.

Another consequence of this policy has been an increase in domestic demand for consumer goods. In 2009, China instituted a system of subsidies to rural residents (mostly small farmers) hoping to stimulate demand to purchase some of the goods originally intended for export.[9] As a result, retail sales in rural areas increased by nearly 30 percent in the last quarter of 2009 as residents used the windfall to purchase a wide range of small electronics and consumer items. Intended initially as a stop-gap measure, these policies have had the effect of stimulating demand, probably on a long-term basis, for many rural residents for whom these types of consumer products had been seen as too expensive.[10] This, in turn, has led to a reevaluation of the efficacy of creating a domestic-demand economy by "creating consumers out of many people who only a handful of years ago were stuck in a subsistence existence."[11]

Chinese proponents of a larger state impetus to move towards a domestic-demand economy develop their argument on a variety of rationales: an assessment that in the wake of the global financial crisis the time is right for such a shift; believing that the U.S. and EU will soon institute protectionist measures that will make the Chinese economy vulnerable to overseas political pressure; and, believing that a security threat is posed by the danger of foreign-owned firms penetrating China's export sector economy even further than they do currently.[12,13]

- Li Changjiu, an adviser to the China-U.S. Economy Association, recently wrote an article in the official State Council newspaper in which he opines that "foreign capital … has now evolved into monopoly capital and is now actively seeking to influence China's economy, society and even politics … the menace to China's economic security is becoming more serious by the day"[14]

PRC economists opposed to the notion that the time is right for a major push towards a domestic-demand economy invariably note that the rapid increase in domestic demand in 2009 was the result of a one-time massive influx of state investment and subsidies that will not be repeated. Some even argue that the state itself, through its continued investment in State-owned Enterprises (SOEs), is the major obstacle to stimulating domestic demand.[15]

- A commentator in China Daily, the official mass-circulation newspaper, claimed "the difficulty China faces in boosting domestic demand is related to State

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[9]Felsted, Andrea. (2010). "Global View with a Local Focus." *Financial Times*, April 21.
[10]Ibid. *"Global View with a Local Focus." (Felsted).*
[11]Ibid. "Global View with a Local Focus." (Felsted).
[12]Changilu, Li. (2010). "Foreign Companies in China are not Chinese Companies." *Beijing Zhingguo Jingji Shibao* Online. April 27.
[13]Gang, Fan (2010). "Behind China's Trade Deficit." *Beijing China Daily* Online (English). April 30.
[14]Op. cit. "Foreign Companies in China are not Chinese Companies." (Changilu).
[15]Chen. (2010). "China's PMI of Manufacturing Strength up in April." *Beijing China Daily* Online (English). May 1.

ownership of enterprises and assets and the role the government plays in the economy … ordinary people cannot share the income from assets because most of it goes to the government."[16]

China's leadership appears to be moving towards providing more opportunities to stimulate domestic demand, cognizant of the continued need for exports for economic modernization.

- Renmin Rinbao, the official organ of the Chinese Communist Party Central Committee, ran an article in late April 2010 on a speech by President Hu Jintao commenting on the annual Government Work Report which noted "expanding internal demand, particularly consumption demand, is vital to ensuring better and faster economic development."[17]

Importance of the Chinese Consumer

Regardless of the outcome of Chinese policy debate on whether to shift from an export-model to a domestic-demand model, the sheer weight of the impact of a rapidly expanding Chinese middle class has major implications for global retailing trends. Overall retail sales in China rose 15.5 percent in 2009 during a time when most other global economies experienced a collapse in retail demand.[18] The increase is nearly double that of the official 2009 GDP rate of 8.7 percent, reflecting a longer-term trend towards higher levels of consumer demand.[19] With the world's largest population of 1.3 billion potential consumers, even a statistically small percentage increase in a middle class with greater disposable income equates into tens of millions of additional consumers. The current urban middle class is estimated to be 70 million, but the majority of Chinese live in rural areas (720 million). [20,21]

The rural sector is expected to receive the lion's share of government funding to "open up" China's interior to economic development. Recent studies by Chinese economists have supported this state plan to "reduce regional inequality" by noting the marginal negative impact of the plan on long-term GDP growth.[22] The modernization of rural financing and impact of land monetization, introduction of agribusiness techniques, and a planned relocation of low-cost export industries to the Chinese interior as opposed to overseas all point to a rapid increase in rural consumer spending.[23,24,25,26] With an

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[16]Op. cit. (2010). "Dichotomy of Government and People's Income." (Zhiwu).
[17]*Beijing Renmin Ribao* Online (Chinese). (2010). "People's Forum." April 29.
[18]Op. cit. "Global View with a Local Focus." (Felsted).
[19]Op. cit. "China Goes Shopping." (Ahmad).
[20]Dyer, Geoff. (2009). "Early Arrival at New World Party." *Financial Times*. October 1.
[21]Kynge, James (2009). "Seeds of Change Look Poised to Transform Rural Life." *Financial Times*. October 8.
[22]Chen, Anping. (2010). "Reducing China's Regional Disparities: Is There a Growth Cost?" *China Economic Review*. March.
[23]Dyer, Goeff. (2009). "Tax Cuts Catapult Country to Top Spot in the World's Car Market." *Financial Times*. October 1.
[24]Op. cit. "Early Arrival at New World Party." (Dyer).
[25]Anderlini, Jamil. (2009). "Old Troubles Still to be Resolved." *Financial Times*. October 1.

estimated 40 percent savings rate, Chinese consumers are likely to open up their piggy banks as the state reintroduces universal health care and insurance measures, freeing up the traditional rationale for such a high savings rate.[27,28,29,30]

Some observers also believe we are witnessing a historical shift in consumer demand from the United States towards China. Ira Kalish, director of global economics at Deloitte Research, believes the U.S. consumer – the long-time king of global demand – is in inevitable decline, overburdened by debt, and that the pattern of spending is shifting from the U.S. and Europe to China, India, and Brazil.[31]

A New Nationalism?

While this shift should result in a rebalancing of borrowing and surplus nations as China becomes more of an importer of foreign-produced consumer goods, the potential exists that a Communist Party-controlled state economy could maintain its current currency imbalance, and/or seek to stimulate domestic demand in lieu of allowing a higher level of imports. This would permit China to become a modern day mercantilist-nationalist economy that imports raw materials to maintain value-added market share while using nationalism to keep foreign imports at low levels.

While such a scenario might seem far-fetched, given China's current commitments under the World Trade Organization (WTO), foreign firms that do business in China have noted an increased nationalist tone that some believe is responsible for a harder edge when negotiating with Beijing. China added new anti-monopoly laws in 2008 to protect its domestic market and PRC ministries have recently imposed conditions on foreign mergers and acquisitions, which have the potential to impact local Chinese firms.[32,33]

The strong strain of nationalism that appears in many commentaries, which favors moving to a domestic-demand economy, also exhibits the darker side of nationalistic sentiments. Under certain conditions, these sentiments could prompt China to consider asserting its economic prowess to establish a PRC-controlled regional economy. Under such a scenario, China could bring Taiwan, ASEAN, South Korea, and even Japan under Beijing's economic control and set it at odds with the West.

Many Western-educated Chinese economists scoff at such notions and argue that China will remain dependent on its export sector for continued economic growth. The current Chinese Communist Party leadership also closely adheres to the line laid down

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[26]Op. cit. "Seeds of Change Look Poised to Transform Rural Life." (Kynge).
[27]Op. cit. "Early Arrival at New World Party." (Dyer).
[28]Op. cit. "Tax Cuts Catapult Country to Top Spot in the World's Car Market." (Dyer).
[29]Op. cit. "The Not so Hidden Hand of the State." (Dyer).
[30]Op. cit. "Seeds of Change Look Poised to Transform Rural Life." (Kynge).
[31]Op. cit. "Global View with a Local Focus." (Felsted).
[32]Op. cit. "The Not so Hidden Hand of the State." (Dyer).
[33]Tucker, Sundeep. (2009). "China Sets Tough Conditions for Foreign M&A." *Financial Times.* November 30.

by former supreme leader Deng Xiaoping to "bide one's time, hide one's capabilities" and continue a policy of economic modernization that has the maintenance of good economic relations with the U.S. as its cornerstone. This would appear to reduce the likelihood of a major change in China's current economic direction even after the major leadership change in 2012-2013 that will see a younger more nationalistic generation assume the reins of power.

Regardless of the outcome of China's policy debate on whether to shift from an export-led growth model to a domestic-demand-led growth model, the sheer weight of the impact of a rapidly expanding Chinese middle class and its population growth promise to have major implications for China's economy. It seems transparent that there will be sizeable increases in China's domestic demand going forward, which will apply heavy pressure on global economic and environmental resources. Nevertheless, a PRC failure to plan for rapidly expanding domestic demand and successful execution of that plan could produce future economic instability in China.

"Responding to Crisis: Foreign Direct Investment in ASEAN"

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Abstract

This paper reflects an analysis of the effects of the 1997 Asian Financial Crisis on foreign direct investment in the Southeast Asia region and identifies national responses that helped Association of Southeast Asian Nations' economies weather the storm. This retrospective analysis provides insights on policy responses that were developed during the 1997 Asian Financial Crisis that are relevant for the recent (2008-9) global financial and economic crisis and beyond.

Olga Bogach delivering her presentation
during the 2010 APEU Seminar.

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[34]Ms. Bogach received her Bachelor's Degree from Brigham Young University where she was valedictorian. She earned a Master's Degree in economics from the University of Hawaii-Manoa. Currently, she is pursuing her doctoral studies at the University of Hawaii-Manoa. Her research interests include international economics with an emphasis on developing countries and experimental economics.

Introduction

The Association of Southeast Asian Nations (ASEAN) was established in 1967 in Bangkok, Thailand and has become the primary economic organizations in the region as well as one of the world's most successful regional agreements. It consists of ten member nations which are extremely diverse in their population, size, political systems, and degrees of economic development. They range from Indonesia, a country with the world's fourth largest population and gross domestic product (GDP) per capita of only US$1,922, to Brunei with the smallest population and the highest GDP per capita of US$30,750. Cambodia, Singapore, and Vietnam stand out as having the most rapid average growth rate of GDP per capita (World Bank, 2009).

Despite the striking diversity among ASEAN members, international trade and foreign direct investment (FDI) are prominent components among all of the economies of the region. This is manifested by their trade-to-GDP ratios, which are higher than the world average. [35] As Asian tigers were demonstrating unprecedented growth over the past decade, ASEAN was becoming a more attractive destination for FDI from the developed and developing world. FDI flows into ASEAN were steadily increasing from 2002 to 2007, achieving its record-high level of US$69,481 million in 2007 (ASEAN Secretariat, 2009). ASEAN's high inward FDI stock as percentage of GDP (43.5% in 2007) stands out when compared to developing countries and Asia as a whole, 29.2% and 29.1% respectively (UNCTAD, 2008).

In 2007, this relative period of calm and economic prosperity was interrupted by a sudden global economic downturn originating in the United States (U.S.). The International Monetary Fund (IMF) World Economic Outlook report (2009) described it as the most severe global recession during the postwar period. It was also the most synchronized global recession in recent history encompassing virtually all the world's regions and causing a 14% decline in global FDI inflows (World Investment Report, 2009). Like other developing nations, ASEAN countries could not escape the shock of the crisis, in part because of their heavy dependency on exports. Economic recession led to a drastic drop in global demand for consumer durable goods and falling commodity prices which in turn slowed down FDI inflows to these economies and weakened FDI prospects.

As seen from Table 1, ASEAN countries have seen a significant decline in inward FDI flows since the beginning of the 2007 global economic downturn. Singapore has experienced the most drastic drop from US$10,226 million in the first quarter of 2007 to only US$3,607 million in the third quarter of 2008—a record low since 1992. Cambodia's inward FDI flows fell by 54.3 percent, followed by Philippines (47.3 percent) and Thailand (42.1 percent). Most countries are seeing bright signs of recovery already, but have yet to see FDI inflows return to their pre-crisis levels. One striking exception is Vietnam where FDI inflows in the third quarter of 2009 were more than double that of the first quarter of 2007.

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[35]Trade-to-GDP ratio = (Imports + Exports) / GDP.

Table 1. FDI Flows into Select ASEAN Countries, Q1:2007 to Q3:2009
($US millions)

Country	Q1:2007	Q2:2007	Q3:2007	Q4:2007	Q1:2008	Q2:2008
Cambodia	203.7	174.6	223.1	265.9	224.1	272.2
Indonesia	1,036.8	1,033.6	2,190.7	2,667.5	2,360.5	1,633.0
Malaysia	1,628.4	3,343.4	2,117.5	1,364.5	1,166.0	4,947.6
Philippines	1,620.0	480.0	525.0	291.0	219.0	386.0
Singapore	10,226.0	8,195.1	6,942.2	6,087.9	8,300.8	3,779.5
Thailand	3,729.0	2,201.4	2,838.6	2,463.7	2,958.0	2,224.1
Vietnam	1,340.0	1,614.0	1,803.0	1,943.0	1,394.0	2,864.0

Country	Q3:2008	Q4:2008	Q1:2009	Q2:2009	Q3:2009
Cambodia	185.7	133.1	93.0	141.8	164.5
Indonesia	3,387.6	1,937.4	1,904.3	1,446.6	986.8
Malaysia	102.9	1,159.3			
Philippines	583.0	215.0	38.0	854.0	
Singapore	3,607.0	6,893.7			
Thailand	2,547.1	2,105.8	2,158.2		
Vietnam	2,465.0	2,856.0	1,152.0	2,148.0	3,300.0

Source: IFS, 2010

But this is not the first time the word "crisis" was heard in these countries. Just a decade prior, ASEAN region had been hit by a severe financial crisis of 1997. Originating in Thailand, the downturn spread throughout ASEAN, other Asian countries and even other parts of the world (Brazil and Russia in the late 1998). ASEAN countries were hit hard and sank deep into recession. Inward FDI into the region plummeted, particularly from the other Asian source countries (Japan, China, and Asian newly industrialized economies (NIE's)).

Certainly, the Asian Financial Crisis of 1997 and the current economic downturn are different in their nature and origins. The early crisis was relatively contained within the region, while the current slump is global and was caused primarily by the spillovers of the U.S. sub-prime loan crisis. However, both these events have had similar destabilizing effects on the ASEAN economies and inward FDI. This paper reflects an analysis of the effects of the 1997 Asian Financial Crisis on FDI in the region and identifies national responses that helped ASEAN countries weather the storm. This retrospective analysis provides insights to inform the present financial crisis.

The rest of the paper is organized as follows. Section II presents the analysis and evaluates national responses to the 1997 Asian Financial Crisis. It examines FDI dynamics in the aftermath of the crisis and addresses the special features of the crisis-struck countries and their policy responses. Section III discusses the applicability of policy responses to the 1997 Asian Financial Crisis to the recent (2008-9) global financial and economic crisis.

Asian Financial Crisis of 1997 and Foreign Direct Investment in ASEAN

Most economists agree that the Asian crisis of 1997 was caused by a combination of two factors: deteriorating fundamentals and changes in investor sentiment (Berg, 1999 and Corden, 2007). Originating in Thailand, the crisis rapidly spread to other Asian countries.[36] ASEAN nations were hard-hit and sank deep into recession. By 1998, FDI inflows plummeted in most ASEAN countries and fell on average by more than one third for the region as a whole. In 1997, Indonesia attracted US$4.7 billion in FDI inflows but witnessed an outflow of FDI of US$0.2 billion by 1998. This, in part, resulted from political unrest which bled into an uncertain investment climate. Malaysian inward FDI fell from US$6.3 billion to US$2.7 billion, or by 57 percent. Inward FDI to Singapore fell from US$13.8 to US$7.3 billion, or by 47 percent in the crisis year. Remarkably, Thai inward FDI increased from US$3.9 to US$7.5 billion by 1998 as foreign investors acquired weakened financial institutions and other capital assets. Several small ASEAN nations suffered stagnation or decline in inward foreign direct investment.

Figure 1 below highlights ASEAN FDI changes in the aftermath of the 1997 crisis by source countries.[37] Total FDI into ASEAN from these source countries suffered a 34 percent decline in just one year following the 1997 crisis. It fell from US$34.1 billion in 1997 to US$22.4 billion in 1998. We observe that inward FDI into ASEAN declined most dramatically from the other Asian source nations as they suffered the effects of the 1997 crisis more severely than other parts of the world. In particular, FDI from Japan to ASEAN fell by 25 percent in just one year—from US$5.2 billion in 1997 to US$3.9 billion in 1998—and continued to decline steadily until 2000. FDI from Asian newly industrialized economies (NIE's) declined by US$1.4 billion (39 percent) by 1998 and continued to fall until it reached record low US$0.3 billion in 2001. Similarly, intra-ASEAN FDI shrunk nearly by half; it plummeted from US$5.2 billion in 1997 to US$2.7 billion in 1998. Intra-ASEAN FDI flows did not reach pre-crisis levels until 2006.

Figure 1.--FDI flows to ASEAN by Source Country, 1995-2008
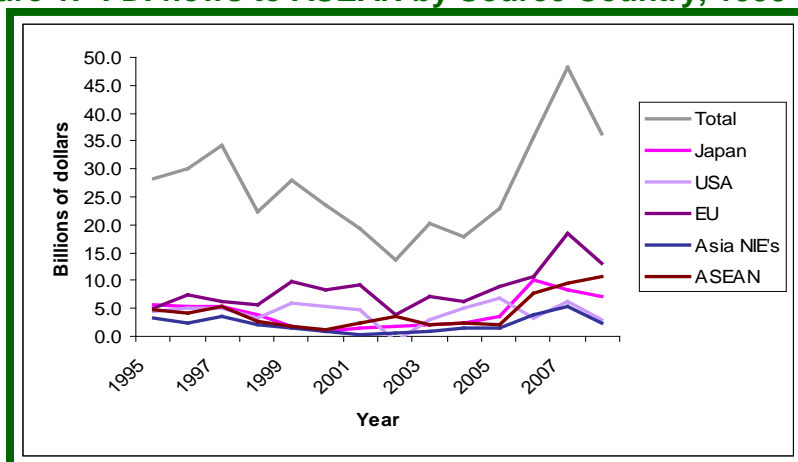
Source: ASEAN Secretariat, 2010

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[36]Kim and Haque (2002) point to several links between troubled economies that led to the spread of the crisis: Trade and investment link, commodity prices link, and competition link.
[37]The source countries included here constitute about 60-80% of all inward FDI into ASEAN.

Foreign Direct Investment Cycles

Following the methodology of Reinhart and Rogoff (2008b), I construct an estimate of foreign direct investment (FDI) cycles for the four ASEAN countries most severely hit by the 1997 crisis: Indonesia, Malaysia, Philippines, and Thailand. I obtain quarterly data on FDI inflows into these countries from the International Financial Statistics Database (IMF, 2009). The historical average in Table 2 includes 8 countries which experienced financial crises during the period of 1899 to 2001: Argentina (2001), Colombia (1998), Spain (1997), Norway (1899), Finland (1991), Sweden (1991), Japan (1992), and South Korea (1997).

TABLE 2.--Foreign Direct Investment Cycles Following the 1997 Asian Crisis

Country	Crisis date	Peak	Trough	Duration of downturn	Magnitude of decline (percent)
Indonesia	Q2 1997	Q1 1997	Q2 2001	4.1	-43.6
Malaysia (estimated)	Q2 1997	1996	1998	2.0	-63.0
Philippines	Q2 1997	Q1 1997	Q4 1997	0.75	-73.8
Thailand	Q2 1997	Q2 1998	Q1 1999	0.75	-59.4
Historical Average	1899-2001			0.84	-109.1

Source: IMF (2009) and author's calculations

Figure 2.—FDI Cycles Following the 1997 Asian Crisis
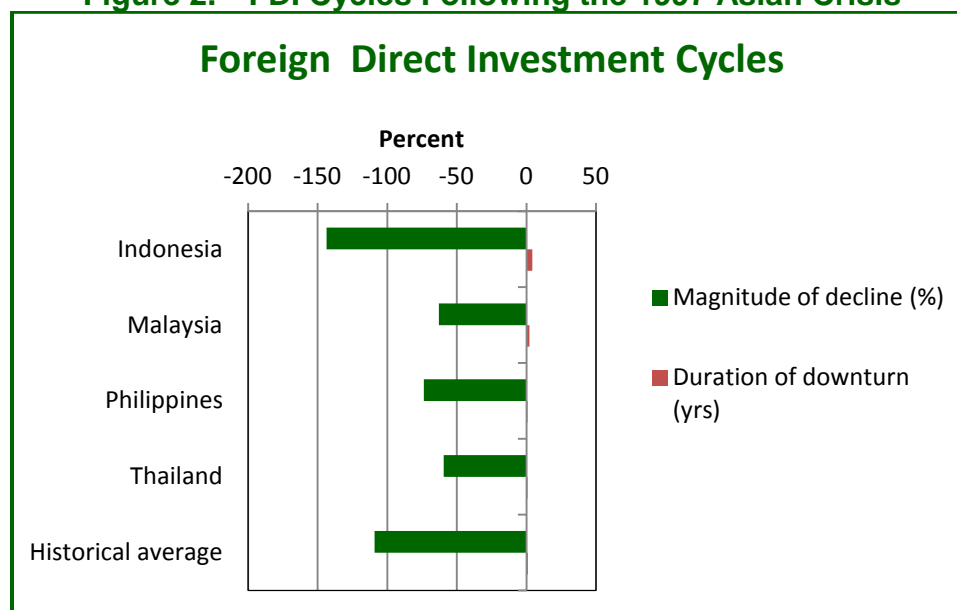
Source: IMF (2009) and author's calculations

From Table 2 and Figure 2 above, we see that inward FDI into the Philippines and Thailand recovered slightly faster than the historic average of 0.84 years. In Malaysia, however, FDI recovery took about two years which is more than twice as long as the average. Foreign investment stalled most significantly in Indonesia where inflows did not recover to post crisis levels until 2001, over four years after the crisis began. What was it about Indonesia that exacerbated the negative effects of the crisis on FDI more

than other ASEAN countries and how were national responses different across countries?

National Policy Responses

As outlined by Corden (2007) and Kim and Haque (2002), three policy responses were pursued in each of the crisis-hit countries. First, as advised by the IMF, countries raised domestic interest rates to moderate depreciation. Second, ASEAN governments proceeded to close many ailing banks and bought non-performing loans through asset management companies in an attempt to rescue the private banks and save the financial system. Indonesian bank restructuring was later referred to as "the most expensive bail-out in world history" as its cost was estimated to be US$75 billion (*The Economist*, 2003). Third, countries pursued domestic demand expansion by increasing public expenditure to help the poor.

Despite pursuing similar objectives, each country had unique aspects which influenced the effectiveness of its policies and actions in responding to the crisis. Thailand, for example, displayed the disadvantages of a fixed-but-adjustable (FBAR) exchange rate regime more than any other ASEAN country hit by the crisis. Malaysia was fortunate among ASEAN nations as it did not have a currency mismatch problem.[38] Effective regulations administered by the Malaysian central bank set ceilings on foreign currency borrowing or lending. As a result, the crisis and depreciation of the Malaysian currency created no foreign debt and thus no IMF intervention was required. In 1998 the Malaysian government also imposed controls on short-term capital outflows in particular, on repatriation of portfolio capital by non-residents. After a year these capital controls were modified, but they strengthen the impact of fiscal and monetary crisis interventions allowing domestic interest rates to fall below US interest rate. Thus, Malaysian economic allowed recovery preceded other ASEAN nations, including Thailand.

Indonesia had the biggest exchange rate and GDP declines and the slowest recovery to the 1997 crisis. Why? At first glance, its initial economic position appeared to have had fewer problems than other ASEAN countries. However, as Hill (2000) notes this was only an "appearance" because inadequate data did not reveal problems of excessive and unwise investments. What made recovery so slow in Indonesia is the concurrence of economic crisis and an impending political crisis, the uncertain succession of elderly president Suharto and his declining ability to manage the country. Efforts to rescue Indonesian banks were financed by money creation, and this exacerbated the currency depreciation. Having lost control of its monetary policy, inflation in Indonesia was not brought under control until late 1998. The extreme currency depreciation and severe currency mismatch problems were caused by a loss of confidence in the government of President Suharto. In summary, the effects of the Asian financial crisis have been so

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[38]A currency mismatch occurs when residents of a country are not adequately hedged against a change in the exchange rate so that a large depreciation generates a large fall in the economy's net worth, usually accompanied by a large fall in output and insolvencies on the part of firms and banks.

much more severe in Indonesia because the financial crisis had triggered a political crisis which in turn contributed to a worsening of the economic problem.

Implications for the Recent Global Economic and Financial Crisis

Despite important differences, both the Asian Financial Crisis of 1997 and the recent (2008-9) global financial and economic downturn have had similar destabilizing effects on the ASEAN economies and on FDI inflows in particular. Consequently, it is important to consider trends in FDI flows into ASEAN countries during 2008-9 with a particular focus on the lessons learned in the aftermath of the 1997 Asian Financial Crisis.

From the data presented, we see that ASEAN crisis-struck countries were each affected in their own way during the recent global crisis, and the recovery period varied considerably. I identified national responses in dealing with the crisis and point to countries' special aspects, which influenced the effectiveness of their policies. In particular, we see that when economic problems were coupled with political instability, the negative effects of the crisis are exacerbated and recovery can be slow and painful. This was the case with Indonesia in 1997 and this appears to be the case with Thailand in the recent crisis context. Not only has Thailand been adversely affected by decreasing export demand as a result of a 2008-9 global economic downturn, economic recovery has been hampered by continuing civil unrests in the country. Despite an over US$3.3 billion economic stimulus package, Thailand's recovery proceeded slowly due to political instability.

Other ASEAN countries responded to the 2008-9 global economic and financial crisis by implementing various economic stimulus programs. Vietnam, Indonesia, and the Philippines received modest stimulus packages (US$1 billion, US$11.2 billion, and US$6 billion respectively), designed mainly for infrastructure projects. Singapore instituted a US$4.5 billion job creation program to tackle dramatic increase in unemployment. Malaysia is one of the hardest-hit ASEAN countries as all of its vital industries have been adversely affected by the crisis. In response, it implemented a US $6 billion (the largest to date) stimulus package to boost the economy (Robinson, 2009).

It is worth mentioning that, at a recent UNCTAD meeting, Secretary General Supachai Panitchpakdi emphasized a vital role investment plays in the big picture of global economic recovery: "You cannot have recovery without going into new investment, new employment. The financial sector must be cleaned up and be able to support new rounds of investment (2009).

Conclusion

This analysis informs us that FDI is an important ingredient in ASEAN economic growth—and increasingly so. Based on the 1997-98 Asian Financial and recent (2008-9) financial and economic crises, we conclude that FDI flows shrink during global economic downturns. Typically, large stimulus packages must be available to lift economies out of recessions—especially when FDI flows diminish. Therefore, ASEAN

economies must plan strategically to constrain/minimize a diminution in FDI flows during an economic crisis or identify alternative funding sources to stimulate their economies. Otherwise considerable economic instability may result.

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"Terrorist Incidents and U.S. Foreign Assistance: Preliminary Experiments with Causality Tests"

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Abstract

What is the nature of the relationship between U.S. Foreign Assistance (military and non-military) and terrorist incidents in selected countries (Bangladesh, India, Indonesia, Philippines, Sri Lanka, and Thailand) that are included in the U.S. Pacific Command's area of responsibility? A logical approach to interpreting the relationship would be to adopt an "opportunity-cost" perspective; i.e., there is a causal and lagged relationship in which terrorist incidents motivate foreign assistance flows. However, Berman *et al* (2009), Berman *et al* (2008), and Kalyvas (2006) reject such an approach. Alternatively, we consider "perverse rent-seeking" as an explanation for the existing relationship between foreign assistance and terrorist incidents; i.e., foreign assistance flows motivate terrorist incidents. We experiment with limited country-level panel data on these two variables to begin uncovering statistical evidence using a well known causality test that was proposed by Granger (1969), which has been augmented by Hurlin and Venet (2003).

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Introduction

What is the nature of the relationship between U.S. Foreign Assistance (FA, military and non-military) and terrorist incidents (TI) in selected countries (Bangladesh, India, Indonesia, Philippines, Sri Lanka, and Thailand) that are included in the U.S. Pacific Command's (USPACOM) area of responsibility (AOR)? A logical approach to interpreting the relationship would be to adopt an "opportunity-cost" perspective; i.e., there is a causal and lagged relationship in which terrorist incidents motivate Foreign Assistance (FA) flows. However, Berman *et al* (2009), Berman *et al* (2008), and Kalyvas (2006) reject such an approach. Alternatively, we consider "perverse rent-seeking" as an explanation for the existing relationship between foreign assistance and terrorist incidents; i.e., foreign assistance flows motivate terrorist incidents. We experiment with a limited country-level panel dataset on these two variables to begin uncovering statistical evidence using a well known causality test that was proposed by Granger (1969), which has been augmented by Hurlin and Venet (2003).

Bottom Line Up Front: Based on available and complete historical time series data for selected categories of FA spending and data on terrorism incidents (TI) and terrorism deaths (TD), we were unable to identify a hypothesized negative relationship between these two variables—i.e., we did not find that more FA spending is correlated with less TI/TD. While the results from one of our models hinted at a positive relationship between these two variables, the paucity of available data preclude the formation of any definitive conclusion concerning this relationship. The study infers that more research on this topic should be performed in order to clarify the nature of the relationship between the two variables and to provide guidance on adjusting FA spending to create and/or enhance policy makers' desired outcomes. None of our models reflect causal relations between FA and TI/TD in either direction.

The paper unfolds as follows. We provide a motivation for the paper so that readers can form a clear perspective on our objectives in conducting this research. Afterwards, we provide a straight-forward theoretical framework for the analysis and set forth our hypotheses. We go on to discuss the data and to explain the analytical methods adopted to test the hypotheses. Finally, we present the analytical results and conclude.

Motivation

The United States (U.S.) is at a critical intersection where expanding security concerns are juxtaposed against a need to shrink budgets or, at a minimum, decelerate budgetary growth. Under these conditions, it is essential that wise decisions be made concerning where to reduce, maintain, and expand spending. In order to make such decisions, policy makers should be able to identify appropriate relationships between spending and goal or objective variables. On the other hand, policy makers should be able to perform analysis and identify relationships that reveal appropriate spending decisions. Theoretically and ideally, policymakers should be able to determine the types of spending that are providing the highest "returns," continue or expand that spending, and reduce or eliminate other types of spending.

Because USPACOM plays a central role in the U.S.'s provision of security services in the Asia-Pacific region, it is at the heart of decisions concerning reducing, maintaining, or accelerating spending in its area of responsibility (AOR). Hence, we undertook this effort to determine the statistical relationship that exists between TI and FA spending.

Clearly, if statistical or analytical results reveal that increased FA spending tends to enhance prospects for achieving security objectives, then increased FA spending may be warranted. However, if no such relationship is unearthed from robust statistical analysis, then policymakers should consider reducing or halting spending until further analysis reveals a more effective approach for achieving security objectives—namely, a reduction in TI/TD. Nevertheless, the existence of FA flows signal their importance to AOR nations; by implication, a reduction or discontinuation of these flows could be potentially destabilizing.

Theoretical framework

A key assumption that has underpinned FA spending vis-à-vis insurgencies (especially terrorist activity) is that improved economic conditions reduce the likelihood of insurgencies. This assumption helped shape an "opportunity-cost" theory that is consistent with the general opportunity cost theory in the field of economics. Specifically, the theory says that, if there is an option set ΣX_i, where i=1..n; then a decision to perform "X_i" carries with it an opportunity cost, which is defined by a smaller option set X^*_i, where ΣX^*_i now goes from 1..n-1. In other words, an economic agent's decision to engage in an act comes at a cost—the opportunity costs of doing any one of the remaining options that are within the original option set. In laypersons' terms, it is as simple as, "you can only be in one place or do one thing at a time." In this case, an insurgent's decision to commit a terrorist act means that s/he cannot engage in conventional economic activities. Therefore, policy makers have operated on the assumption that if they are able to improve economic conditions in areas where insurgents operate, then those improved economic conditions could draw insurgents out of terrorism and into conventional income producing activities.

Using panel data and taking Iraq and the Philippines as case studies, Berman *et al* (2009) show that, at least in these cases, the opportunity cost theory is flawed. They identified a negative correlation between unemployment and violence by insurgents. That is, as employment rises (unemployment decreases), violence rises.[40] Berman *et al* (2008) and Kalyvas (2006) support this conclusion.

"Rent seeking" is an economic theory that is somewhat related to the "opportunity cost" theory.[41] Rent seeking is a process by which economic agents who desire a beneficial

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[40]Berman *et al* (2008) hypothesize that counter-terrorism efforts (say check points) may reduce violence, but they may simultaneously reduce economic activity (i.e., increase unemployment). Similarly, the authors argue that, if local citizens support terrorism, but can only engage in insurgencies after normal needs are met, then the stronger the economy (the lower is unemployment) the higher is the level of terrorism.

[41]Nobel Prize winning economist Anne Krueger received credit for coining the term "rent-seeking" in a paper that she published in 1974 entitled, "The Political Economy of the Rent-Seeking Society"; however,

opportunity will pay to gain access to that beneficial opportunity. As a classic example, imagine that you are an official of a municipal government, that the municipality has no cable television service provider, and that you have been granted the right to select one firm to provide cable television services in the municipality. Assume that the cable television service provider that will be selected will reap $1 million in earnings above, and unrelated to, normal operating profits during the designated period of service. The $1 million, in this case, is defined as the "rent" that can be obtained from this beneficial opportunity because it is a windfall and is not directly related to actually production. Now consider that several cable television service providers would like to gain access to the beneficial opportunity and the $1 million rent that accompanies it. Theoretically, each prospective television cable service provider (i) would be willing to pay an amount "Y_i" to secure this opportunity.[42] Such payments are termed "rent-seeking" payments because they assist the prospective cable television service provider in obtaining the opportunity from the holder of the rent.[43]

One can model FA funds and insurgency/terrorism in a rent-seeking framework. In this case, access to FA funds is the beneficial opportunity which accrues to foreign governments without any direct production of terrorist events on their part. Often, the U.S. extends FA funds when terrorism and related events occur—actions that are produced by anti-government groups.[44] Therefore, the relationships that are forged between U.S. and foreign diplomats and between U.S. Military Attachés and foreign military officials can be viewed as a rent-seeking process for obtaining FA funds. The payment for the FA funds, in this case, is higher levels of TI/TD. Stated bluntly, certain government officials may turn a blind eye to insurgency/terrorism as long as it does not become too destabilizing—especially when it causes FA spending to flow. Uncertainty about FA flows can be reduced the greater is the frequency and intensity of the insurgency (terrorism).

We, therefore, hypothesize, that it may be possible to identify within data on insurgency activity and FA spending not only a positive correlation between FA spending and TI/TD, but also a "Granger Causality" (Granger (1969)) relationship, where causality runs from FA to TI/TD. We test for this relationship using the data that are discussed below. Our goal, then, is to reject the following null hypotheses:

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there is evidence that Gordon Tullock was the originator of the concept, which he discussed in a 1967 paper entitled, "The Welfare Costs of Tariffs, Monopolies, and Theft."

[42]Such "rent seeking" payments may be extended in a variety of legally acceptable forms, including: "Wining and dining" you locally; offering you excursions to other municipalities so that you can observe their successful cable television service operations (numerous amenities could be extended during this excursion); or members of your immediate or extended family may be offered favorable opportunities.

[43]When the sum of rent-seeking payments (ΣY_i) by all contenders exceed the value of the rent itself (in this case $1 million), then economists argue that the rent-seeking process is inefficient because, in the overall economy, all of the rents have been dissipated by rent-seeking payments. That is, overall, more has gone into securing the rent than the value of the rent itself.

[44]It is noteworthy that, in a 1942 book, *Capitalism, Socialism, and Democracy*, Joseph Schumpeter (2010) develops a theory of "creative destruction." Such a theory implies that insurgency/terrorism also has the beneficial effect of engendering economic activity through rebuilding efforts after destruction occurs.

H_{OA}:   There is a negative correlation between FA and TI/TD.
H_{OB}:   TI/TD does not Granger Causes FA
H_{OC}:   FA does not Granger Cause TI/TD

Data

We consider FA data first, and then take up TI/TD data. The U.S. Code, Title 10—Armed Forces, assigns authorities to the Department of Defense to expend funds to build partner capacity, which may be viewed as FA. In addition, Title 22—Foreign Relations and Intercourse of the U.S. Code, Chapter 32-Foreign Assistance, Subchapter I, International Development (§§ 2151—2296f) and Subchapter II, Military Assistance and Sales (§§ 2301—2349bb6) establish explicit categories of FA spending. FA spending under Subchapter I is mainly controlled by the U.S. Department of State, and the Department of Defense is primarily responsible for spending under Subchapter II. In addition, the president may delegate by Executive Order that these departments expend FA funds that his office is authorized to expend.

Arguably, all U.S. Government spending in foreign countries with known insurgencies is intended as a direct or indirect counter-terrorism effort. However, to limit the scope of the study we only consider FA spending by the U.S. Department of State and the Department of Defense (DOD). We identified a sizeable portion of State and DOD spending from Congressional Budget Justification Documents, which are highlighted below:[45]

- Development Assistance (DA): Spending to help developing countries build and maintain social and economic institutions necessary to achieve self-sustaining growth and to improve the quality of life.
- Economic Support Funds (ESF): Spending to assist developing nations in clearing short- and long-run political, economic, and security hurdles.
- Foreign Military Financing (FMF): For purchases of defense articles, services, training, and construction.
- International Military Education and Training (IMET): Spending to educate and train future civilian and military leaders.
- International Narcotic Control and Enforcement (INCLE): Spending to control narcotics trafficking and money laundering.
- Nonproliferation, Anti-Terrorism and Demining (NADR): Spending to increase mine awareness and to provide mine clearance training and removal; border security; small arms destruction; and anti-terrorism training.
- Peace Keeping Operations (PKO): Funding to support peace keeping efforts.

In addition, the following categories of FA spending by DOD were identified:[46,47]

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[45]Historical data for these categories of spending can be obtained from the following Internet Web site: www.state.gov/documents/organization/124295.pdf

[46]Historical data for these categories of DOD spending are from PACOM program officers and from Internet Web sites that are maintained by program offices in the Officer of the Secretary of Defense. They may be made available upon request.

- Asia-Pacific Regional Initiative (APRI): Spending to build mil-to-mil cooperative relationships with allies and potential partners.
- Combatant Command's Initiative Funds (CCIF): Spending to enhance war-fighting capabilities, readiness, and to sustain forces.
- Counter-Terrorism Fellowship Program (CTFP): Spending to develop counter terrorism capabilities and capacities within partner nations mainly through training.
- Developing Country Combined Exercise (DCCEP): Spending to cover certain expenses that are incurred by developing countries when participating in a U.S.-led exercise.
- Global Peace Operations Initiative (GPOI): Spending to address major gaps in international peace support operations (PSO) by training a foreign military PSO force and by developing transport and logistical capacity to deploy the force.
- Global Train and Equip (GTE 1206): Spending to assist partner nations in meeting urgent or emerging terrorism challenges.
- Humanitarian Civic Assistance (HCA): Spending to provide humanitarian and civic assistance in conjunction with authorized military operations.
- Overseas Humanitarian Disaster Assistance and Civic Aid (OHDACA): Spending to build indigenous capacity to respond to disasters stimulates cooperative relationships with civil societies in partner nations.
- Personal Expense (PE): Funds to meet personal expenses for defense personnel from developing countries to attend bilateral or regional conferences or seminars.
- Stabilization and Reconstruction (S&R 1207): Spending to provide equipment, supplies, services, and training, and funding for reconstruction projects.

For terrorism and related events, we use data from the Worldwide Incidence Tracking System (WITS), which is managed by the National Counter Terrorism Center, an independent agency that was established by Executive Order 13354 in 2004. The agency reports to the President and to the Director for National Intelligence.[48] The WITS database delineates terrorism and related incidents beginning with 2004, including: qualitative information that describes the incidents plus the numbers killed, injured, and taken hostage.

We gathered historical fiscal-year (FY) 2005 through 2009 data for each category of FA spending and for terrorism and related incidents on a country by country basis for Bangladesh, Cambodia, India, Indonesia, Malaysia, Philippines, Sri Lanka, and Thailand.[49]

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[47]Complete historical data were not available for the CCIF, DCCEP, HCA, and PE series.

[48]WITS data are obtainable from the following Internet Web site: http://wits.nctc.gov.

[49]Because Cambodia and Malaysia reflected so few terrorist incidents during the period under study, our statistical analysis is limited to the six remaining countries.

Analytical methods*

At the outset, we cannot over emphasize how tenuous any analytical results will be based on our analytical methods due the paucity of data with which we work. As indicated in the title to this paper, the results or our analysis are "experimental," mainly because we do not have sufficient degrees of freedom to perform certain tests that can substantiate the validity of the results.

We employ three analytical methods:

1. We test ordinary least squares (OLS) models that identify the fundamental correlation between FA spending (total (T) or military (M)) and terrorists incidents (TI or terrorism deaths (TD)).[1] These models include no country fixed effects and assume no unobserved heterogeneity. The models assume a one- or two-period lag between the dependent (FA) and exogenous (TI/TD) variables. The models are depicted in Equation 1.

   Equation 1

$$\Delta FA_{T \text{ or } M_{i,t}} = \sum_{k=1}^{K} \gamma_i^{(k)} \Delta FA_{T \text{ or } M_{i,t-1}} + \sum_{k=0}^{K} \beta_i^{(k)} \Delta TI_{TI \text{ or } TD_{i,t-1-k}} + v_{i,t}$$

   Where Δ represents first differencing (detrending), i is the ith country panel in the dataset, t is for time, γ and β are estimated coefficients, k is for the number of lags, and v is an error term that includes panel specific errors α_{it} and a pure random component ε_{it}.[2] This regression will permit us to test H_{OA}, and reject it if the β coefficients are not statistically significant and carry a positive sign.

2. We test least squares dummy variable (LSDV) models that include country fixed effects (each country) and assume that there is unobserved heterogeneity. The models are tested using one- and two-period lags of the independent variables. For these models, we regress FA spending (total or military) on TI or TD and vice-versa. The models are depicted in Equations 2 and 3.

   Equation 2

$$\Delta FA_{T \text{ or } M_{i,t}} = \sum_{k=1}^{K} \gamma_i^{(k)} \Delta FA_{T \text{ or } M_{i,t-1-k}} + \sum_{k=0}^{K} \beta_i^{(k)} \Delta TI_{TI \text{ or } TD_{i,t-1-k}} + \sum_{i=1}^{6} \lambda_i DV_{i,t} + \epsilon_{i,t}.$$

*--This section assumes knowledge of econometrics; it may be skipped without loss of comprehension of the paper's overall thrust.

[1] According to Sayrs (1989), OLS estimates serve as baseline measures. Other, more sophisticated techniques for preparing parameter estimates for panel data models are available. We do not develop or present them here because of data paucity and the incomplete nature of this analysis.

[2] This model reflects a one-period autoregressive component because congressional spending is linked from one year to the next; admittedly, multi-year spending is becoming more commonplace. Similarly, TI should be related to FA on a lagged basis—with the best fit possibly reflecting a multi-year lag structure. However, the paucity of available data restricts our consideration to two-period lags.

Equation 2 is consistent with Equation 1 except for the final two terms on the right-hand side, where λ is an estimated coefficient, DV is for dummy variables, and ε is assumed to represent white noise. The purpose of this regression is to reduce the bias in our estimated parameters and to account for inter-country heterogeneity, with the identical goal of rejecting H_{OA} if the β coefficients are not statistically significant and carry a positive sign.

3. We test for Granger (1969) causality by running unrestricted (autoregressive models with a lagged value of both the dependent and independent variable) and restricted (autoregressive models with lagged values of the dependent variable but with no lagged values of the independent variables) models, obtaining the results (residual sum of squares) and using those results in an F-Test to identify one-way causality.[3] Of course, in the Granger (1969) paradigm, it is insufficient to prove causality in one direction; it must be the case that only one-way and not two-way causality exists. That is, if the results reveal that TI/TD Granger causes FA and that FA Granger causes TI/TD, then we do not have causality at all. Rather, other ("more powerful) variables must be contributing to the relationship between FA and TI/TD. The Test F-Statistic is presented in Equation 3.

Equation 3

$$F = (N - K)\frac{(SSR_R - SSR_{UR})}{q(SSR_{UR})}$$

where F is for the statistical distribution on which the test is based. It has q, and N-K degrees of freedom; N is for the total number of observations in the regression dataset; K is the number of estimated parameters in the unrestricted regression; q is the number of parameter restrictions; and SSR represents the sum of squared residuals that result from the regressions. The objective of this test, as stated above, is to reject H_{OB} and H_{OC}. If the F-statistics that are derived from Equation 3 are greater than the "Critical F-statistic," then we can reject both hypotheses.

The F-test that we use to test for Granger (1969) causality is a necessary step in our analysis. However, it is not sufficient to conclude categorically that causality is or is not reflected in the panel dataset. The models and tests just discussed provide overall readings concerning causality; they are not country-panel specific.

Hurlin and Venet (2003) build on previous scholarship that explores tests for causality using limited (in the number of time series observations) panel datasets. They develop a series of four tests for causality (Homogeneous panels with no causality; homogeneous panels with causality; heterogeneous panels with no causality, and heterogeneous panels with causality). These tests enable investigators to not only

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[3]The unrestricted regression is consistent with Equation 2. The restricted regression is consistent with Equation 2, except that the second term on the right-hand side is excluded.

assess whether causality is reflected in the dataset generally, but permit identification of causality for specific component of the panel. Unfortunately, they conclude (p. 15) that, in order to apply their test statistics, each panel in the dataset must meet the following criterion: "T≥5+ 2K" observations; where "T" is the number of time periods reflected by the panel excluding the initial differencing adjustment and "K" is the number of lags represented by the autocorrelated and exogenous variables that are on the right hand side of the regression equation that is used to test for causality. In our case, because T is never greater than 3, we cannot employ their tests. For this reason, we again reemphasize that very little credence should be given to the results that are reported below. Hurlin and Venet's (2003) criterion for T informs us that we must wait for at least four additional years of data to become available in order to use their tests. The results that are reported below can best be used to compare with results that are prepared when sufficient data are available to meet the Hurlin and Venet (2003) criterion and to assess the extent and magnitude of misinformation that can be conveyed by very limited datasets.

Analytical results

This section includes a discussion of regression results and the results of causality tests. However, before turning to those results, consider the following summary statistics from the dataset that is used to conduct the analysis. The data are for fiscal years (FY) 2005-2009.

Table 1.—Summary Statistics of Data Used in the Analysis, FY 2005-9

Countries	FA_T (Millions)	FA_M (Millions)	TI	TD
Bangladesh	$180.3	$42.3	215	113
India	$135.8	$11.9	4,770	5,546
Indonesia	$752.0	$127.4	160	121
Philippines	$580.5	$273.4	1,239	1,101
Sri Lanka	$626.0	$575.9	715	1,454
Thailand	$60.8	$27.2	3,563	4,273
Country Averages	$389.3	$176.3	1,777	2,101

What is clear from these data is that there is no tight and positive association between the number of terrorism incidents or deaths and the level of FA spending; that is, higher levels of TI and TD are not highly correlated with the highest levels of FA spending (FA_T or FA_M).

Regression models

We tested regression models based on Equations 1 and 2. Models that featured FA_T as the dependent variable produced very low adjusted R-squares and no significant

coefficients for the TI or TD exogenous variables. The most interesting results were derived from models that featured FA_M as the dependent variable. The results from these models appear in Tables 2 and 3 that are located at the end of this paper.[50] Results that are statistically significant at the 5 percent level are highlighted in the tables in blue.

Table 2, which reflects the results of regressing FA_M on TI, shows only statistically significant autoregressive and dummy right-hand side variables. This table is mainly presented for completeness.

On the other hand, Table 3, which reflects the results of regressing FA_M on TD, shows a statistically significant and positive estimated coefficient for the two-period lagged TD variable in column 7. While the coefficient for the TD variable is not statistically significant in the fully specified (Equation 2) model that is presented in column 8, the variable does continue to reflect a positive sign. Notably, the column 7 and 8 Adjusted R-squares exceed 0.60, and the F-statistics are statistically significant at the 5 percent level. Given the column 7 results, we could, theoretically, reject H_{OA}; i.e., conclude that terrorism-related deaths are positively correlated with FA spending. This would imply that the higher the number of TDs, the higher the level of FA spending. However, the column 7 model is not fully specified and, as stressed throughout this paper, we do not have sufficient degrees of freedom to claim that these results are valid.

Granger Causality

Using regression results and the F-test that is presented in Equation 3, we computed the following F-statistics:[51]

- Test: TI Granger cause FA_M: F-statistic 0.89
- Test: FA_M Granger cause TI: F-statistic 1.51
- Test: TD Granger cause FA_M: F-statistic 0.64
- Test: FA_M Granger cause TD: F-statistic 2.51

Given that the critical F-statistic is 9.55 for these models, we cannot reject H_{OB} and H_{OC}. In other words, we cannot reject the null hypotheses that TI does not cause FA_M and that TD does not cause FA_M.

Comments

The foregoing results do not provide clear evidence on the nature of the statistical relationship between FA and TI/TD. We cannot say definitively whether the correlation is positive or negative, and we certainly cannot conclude that there is a causal relationship between the two variables. However, these results should stimulate our interest in awaiting additional years of data, which can be used to extend the tests that

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[50]Complete results are available from the author upon request.
[51]We use underlying regression results from models that are highlighted in columns 5, 8, 10, and 13 in Tables 1 and 2.

are discussed in this paper and to uncover the true nature of the relationship between the variables.

Conclusion

The research that is presented in this paper explores the nature of the relationship between two important variables in the context of U.S. international relations during the first decade of the 21st century. The events of September 11, 2001 placed terrorism and insurgency up front and center on U.S. policymakers' radar screens. Almost immediately following 9/11, efforts began in the FA arena to help counter and deter terrorism. Have those efforts been successful? Can we see declines in TI/TD in response to increased FA spending? According to this research, insufficient data are available to arrive at definitive conclusions concerning the questions. However, the available data do not sketch out even a hazy picture of declining terrorist incidents in response to increased FA spending, which one might expect if the relationship was highly correlated.

From a military and diplomatic standpoint, it is important to know whether policies are working. The data discussed in this paper provide an excellent opportunity to bring statistical science to the table to help assess the efficacy of the U.S. FA policy. When more data are available, policymakers may find that their FA policies are producing very good results. On the other hand, they may find that, at least with respect to the Asia-Pacific region, U.S. FA policy is producing less than desired results.

The good news is that the type of straight-forward econometric analysis that is presented in this paper can be a very useful method for answering the foregoing questions. But the method can provide much more than just "yes" or "no" answers. It can also provide excellent guidance on how to revise ineffective policies to make them more effective, and to develop new policies that can be effective. Nevertheless, the existence of FA flows signal that they are important to AOR economies. Care must be taken in halting, reducing, or modifying them so as to not create economic instability.

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Table 2.—Statistical Relationship between FA_M and TI

Variables/ Statistics	Regressing Military Foreign Assistance (ΔFA_M) on Terrorist Incidents (ΔTI)								Regressing ΔTI on ΔFA_M				
	1	2	3	4	5	6	7	8	9	10	11	12	13
$\Delta FA_{M,t-1}$	-0.986 (0.000)	-0.998 (0.000)	-1.510 (0.000)	-0.992 (0.006)	-1.943 (0.000)	-1.008 (0.008)	-0.981 (0.017)	-1.859 (0.000)					
ΔTI_{t-1}		-112.623 (0.516)	-127.122 (0.447)			-151.268 (0.528)	-109.796 (0.713)	109.641 (0.434)					
ΔTI_{t-2}							99.471 (0.798)	266.879 (0.307)					
Bangladesh			8578.6 (0.896)		17876.4 (0.463)			22874.9 (0.402)					
India			-19991.7 (0.778)		657.2 (0.978)			51471.4 (0.380)					
Indonesia			10337.,8 (0.875)		-10352.1 (0.665)			-9372.0 (0.711)					
Philippines			30195.7 (0.654)		9003.5 (0.705)			-10357.6 (0.738)					
Sri Lanka			263660.7 (0.007)		504988.2 (0.000)			22874.9 (0.402)					
Thailand			178.9 (0.008)		6110.9 (0.797)			-50203.4 (0.396)					
ΔTI_{t-1}									-0.182 (0.466)	-0.354 (0.002)	-0.187 (0.4476)	-0.192 (0.490)	-0.334 (0.009)
$\Delta FA_{M,t-1}$											0.000 (0.808)	-0.000 (0,.836)	-0.000 (0.752)
$\Delta FA_{M,t-2}$												0.001 (0.840)	-0.003 (0.217)
Bangladesh										-29.8 (0.313)			-26.2 (0.361)
India										-187.3 (0.001)			-185.2 (0.005)
Indonesia										3.6 (0.896)			63.7 (0.256)
Philippines										66.4 (0.055)			125.2 (0.069)
Sri Lanka										-71.0 (0.047)			-47.2 (0.358)
Thailand										-335.2 (0.000)			-341.8 (0.001)
N	18	18	18	12	12	12	12	12	12	12	12	12	12
Adj. R^2	0.44	0.42	0.51	0.41	0.78	0.37	0.31	0.65	-0.04	0.75	-0.14	-0.26	063
F-Statistic	16.76	8.32	4.22	11.08	75.21	5.47	3.33	56.34	0.57	32.13	0.29	0.19	30.43

Table 3.—Statistical Relationship between FA_M and TD

Variables/ Statistics	Regressing Military Foreign Assistance (ΔFA_M) on Terrorist Deaths (ΔTD)								Regressing ΔTD on ΔFA_M				
	1	2	3	4	5	6	7	8	9	10	11	12	13
$ΔFA_{M,t-1}$	-0.986 (0.000)	-0.986 (0.001)	-1.535 (0.000)	-0.992 (0.007)	-1.943 (0.000)	-0.992 (0.009)	-1.011 (0.000)	-1.873 (0.000)					
$ΔTD_{t-1}$		0.654 (0.994)	-76.596 (0.487)			-3.536 (0.976)	-179.688 (0.095)	-17.65 (-0.739)					
$ΔTD_{t-2}$							775.011 (0.009)	113.237 (0.339)					
Bangladesh			10496.4 (0.874)		17876.4 (0.463)			16607.3 (0.544)					
India			8280.2 (0.902)		657.2 (0.978)			2709.9 (0.925)					
Indonesia			10453.3 (0.874)		-10352.1 (0.665)			-8144.6 (0.760)					
Philippines			22912.7 (0.730)		9003.5 (0.705)			3715.9 (0.890)					
Sri Lanka			277571.1 (0.006)		504988.2 (0.000)			467391.3 (0.002)					
Thailand			47905.7 (0.611)		6110.9 (0.797)			-4252.5 (0.933)					
$ΔTD_{t-1}$									-0.951 (0.031)	-2.991 (0.000)	-0.962 (0.037)	-0.966 (0.048)	-3.022 (0.000)
$ΔFA_{M,t-1}$											-.0.001 (0.664)	-0.001 (0.672)	0.000 (0.561)
$ΔFA_{M,t-2}$												-0.002 (0.893)	0.008 (0.269)
Bangladesh										-71.3 (0.542)			-78.462 (0.431)
India										-813.0 (0.001)			-818.868 (0.003)
Indonesia										-48.8 (0.673)			-227.593 (0.245)
Philippines										-68.3 (0.558)			-243.11 (0.220)
Sri Lanka										-296.0 (0.043)			-265.007 (0.172)
Thailand										2308.2 (0.000)			2356.462 (0.000)
N	18	18	18	12	12	12	12	12	12	12	12	12	12
Adj. R^2	0.44	0.40	0.51	0.41	0.78	0.35	0.61	0.64	0.26	0.75	0.21	0.12	0.64
F-Statistic	16.76	7.88	4.2	11.08	75.21	5.04	10.21	50.30	6.15	31.6	2.95	1.78	40.00

"U.S.-China Economic and Financial Interrelations During a Crisis"

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Abstract

This analysis considers various facets of economic interdependence between the United States and China in the event of conflict. Our analysis reveals that China would be affected more adversely by disruption of the two countries' economic relationship; e.g., China would incur greater damage to its production and international trading operations than would the U.S. However, the nature of financial interrelations would cause both nations to be harmed by a discontinuation of their financial relationship, with the U.S. being harmed more severely; that is, the U.S. would likely experience greater adverse adjustments to the prices of its financial assets and to its currency than would China..

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Introduction

This paper considers the potential economic instability that could result if the United States (U.S.) and China engaged in military conflict. It considers how economic and financial interrelations would be affected, and the fact that the U.S. would lose an important investor. We consider the classic scenario that China might unload large volumes of U.S. securities. Finally, we discuss how perceptions of economic risk would change in a conflict environment.

Economic Interrelations

In the event of conflict, U.S.-China trade relations would be disrupted. For 2009, the total value of U.S.-China merchandise trade was US$366 billion: The U.S. had US$69.6 billion in exports to China and US$296.4 billion in imports from China.

Strategically, it is important to consider how the trade disruption would affect the flow of "Advanced Technology Products" (ATPs). According to the U.S. Census Bureau, U.S.-China trade in ATPs totaled US$ 11.3 billion in 2009. The U.S. exported US$ 2.1 billion in ATPs to China, while the U.S. imported US$ 9.1 billion in ATPs from China. The largest category of ATP flows was U.S. imports of "Information and Communications" products—amounting to US$ 8.2 billion, which is 2.2 percent of U.S. trade with China and 0.3 percent of total U.S. trade.[53] The discontinuation of this small volume of trade, especially if it is short-lived, should not have significant negative effects on broader U.S. economic functioning.

More generally, with a total of US$ 1,038.4 billion in merchandise exports during 2009, there are no major trade categories that constitute one percent of this volume. However, nearly one percent of U.S. exports to China is accounted for by soybeans (US$ 9.2 billion).

U.S. total merchandise imports for 2009 were US$ 1,575.4 billion. There are seven major categories that account for greater than, or nearly, one percent of total U.S. imports: (1) Computers; (2) computer accessories, peripherals, and parts; (3) apparel and household goods-cotton; (4) apparel and household goods-other textiles; (5) Other (clocks, port typewriters, other household goods); (6) toys, shooting and sporting goods, and bicycles; and (7) television receivers, VCRs, and other video equipment. These seven categories are valued at US$ 146.5 billion, which accounts for about 50 percent of total U.S. merchandise imports from China, about nine percent of total U.S. merchandise imports, about six percent of total U.S. merchandise trade, but just one percent of U.S. GDP. While significant in value, these goods are not absolutely critical to U.S. economic functioning; i.e., the U.S. should be able to survive for an extended

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[53]"Information and Communications" products are products that are able to process increased volumes of information in shorter periods of time. They include central processing units, all computers and some peripheral units, such as disk drive units and control units, along with modems, facsimile machines and telephonic switching apparatus. Examples of other products included are radar apparatus and communication satellites.

period without the ability to secure these items from China. It is important to note that there are substitutes for these products that may be available from other trading partners. Of course, manufacturing firms that produce products for the China market, and manufacturing, wholesale, and retail establishments that import products from China, are likely to find the trade disruption somewhat problematic.

China, on the other hand, would lose access to a very important food import (soybean), about 25 percent of its total merchandise export market, and access to about seven percent of the goods that it imports.

Financial Interrelations

The U.S. Department of the Treasury reports that Federal debt securities held by the public (marketable) totaled US$ 6,988.0 billion at the end of fiscal year (FY) 2009. The department also reports that, for the same period, China held US$ 938.3 billion in U.S. Treasury Securities or about 13.4 percent of the total. In addition, China held around US$500 billion in US Agency securities, equities, and corporate debt securities at the end of FY 2009.

In the event of conflict, we surmise that the following scenario would unfold. First, disruption in trade flows between the two countries would preclude the need for China to recycle its accumulation of dollar foreign exchange reserves into U.S. Federal securities. In other words, the U.S. would lose, at least temporarily, an important investor (purchaser of Federal securities). Second, China could make a decision to "dump" some proportion of the dollar-denominated financial assets that it holds onto international financial markets to injure the U.S. financial system. Below, we analyze the possible effects of these actions. While part one of the scenario is a forced outcome that would be produced by the conflict, part two of the scenario would result from a conscious decision. Logically, the decision maker (China) would not undertake a decision that would impose more harm on itself than on the other party in the conflict (the U.S.). On balance, then, we conclude that the U.S. would be the recipient of the most unfavorable effects of financial interrelations during a U.S.-China conflict. It is important to keep in mind that the effects that we describe may be altered substantially by prevailing conditions in U.S. and international markets at the time the aforementioned actions are taken.

Loss of a Key Investor

As you know, U.S. financial statements indicate a persistent deficit position. In other words, the U.S. must engage in continuous borrowing to finance its operations. For FY 2009, the U.S. borrowed US$ 8.9 trillion from the public, repaid US$ 7.2 trillion in debt held by the public, and accumulated US$ 1.7 trillion in new debt. From June of 2008 until June of 2009, China increased its holdings of U.S. Treasury Securities by US$ 189 billion. Consequently, we conclude that around 10 percent of the newly-accumulated debt was purchased by China. What would be the upshot of losing an investor that accounts for 10 percent of U.S. borrowing? The answer is that the primary impact

would be borrowing at a higher interest rate. However, as long as the level of risk that is perceived to be associated with U.S. debt remains substantially unchanged, then borrowing could continue—albeit at a somewhat higher interest rate. It is noteworthy that, during certain periods of the 2008-2009 global financial and economic crisis, U.S. sales of debt securities were over-subscribed; i.e., the U.S. borrowed at or near a zero percent interest rate.

This higher cost of capital outcome also applies to U.S. agencies that are likely to have China as an important investor. However, because China owns a relatively small amount of private sector corporate debt and corporate equities, a decision by China to dump this debt and unload these equities should not have a significant effect on the price of corporate bonds or equities. That is, corporate bond yields should not rise substantially and the price of corporate share should not fall dramatically.

Dumping of Securities

During a conflict, China could dump a portion of the U.S. debt that it owns onto international financial markets. It is highly likely that the debt would be purchased by other investors at a fraction of the original cost—implying a higher yield (interest rate) on the debt. Of course, China would be harmed financially by this decision (the difference between the purchase and sales price of the debt). Theoretically, China would only dump a volume of securities that would bring a sales price that is consistent with acceptable losses. The U.S., too, would be harmed by the transaction because new debt issuance by the U.S. would reflect the aforementioned higher yield—at least until all of the debt that was dumped onto the market by China is purchased by investors. This higher yield on U.S. debt could be a short- or longer-term phenomenon, depending on the perceived level of increased risk that would prevail in the market with respect to U.S. securities.

Risk Perceptions

The ongoing financial crisis in Europe involving the PIGS (Portugal, Ireland, Greece, and Spain) highlights how risk perceptions can spook markets. That is, herd trading behavior that is not motivated by a rational analysis of conditions in the market can evaporate a tremendous amount of wealth in a day or over a series of days. The current crisis is not a new phenomenon, but is reflective of financial crises that have surfaced over and over again throughout the history of financial markets.

In the U.S case and in the event of a conflict with China, market reactions to a disruption of trade between the two countries and to an interruption of financial transactions between the countries will depend, in large measure, on the prevailing economic and financial conditions in the U.S. when the events transpire.

Market reactions (spooking of markets) will be less dramatic and less problematic to the extent that the U.S. financial "house is in order." That is, the aforementioned events will cause more moderate effects on financial markets if the U.S. economy is reflecting

strong growth (above 3.0 percent); inflation is under control (less than 2.5 percent); U.S. unemployment is at historical norms (about 6.0 percent); the U.S. Government's fiscal deficit is below 6.0 percent of GDP; the U.S. debt-to-GDP ratio is below the 70 percent range and a plan is in place to reduce it further; yields on U.S. debt securities are consistent with historical trends; U.S. equity markets are near historical highs; and there is no impending political or military crisis or major natural disaster in which the U.S. is engaged.

Conclusion

This analysis reveals that the economic effects of a U.S.-China conflict, although discomforting, could be weathered fairly well by the U.S. China, on the other hand, would likely find a disruption of trade somewhat problematic. We arrive at a similar conclusion with respect to the financial effects of a U.S.-China conflict. We caveat this conclusion noting that China is in the driver seat for a key component of financial transaction during a prospective conflict; China cannot be expected to act to harm itself more than it imposes harm on the U.S. However, we should be circumspect concerning these conclusions recognizing that investors often reflect irrational behavior during a crisis—mainly in response to changes in the perceived level of risk. Therefore, the extent of irrational market behavior and the spooking of markets will be moderated by the extent to which the U.S. economic and financial house is in order when the events occur.

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