

THE ASIA PACIFIC AFFAIRS JOURNAL

ECONOMIC SECURITY

ASIA IN THE AGE OF TRUMP

AN INTERVIEW WITH
ANDREW NATHAN

SHADOW BANKING

THE LONG SHADOW
OVER CHINA'S GROWTH
PROSPECTS AND THE
GLOBAL FINANCIAL
SYSTEM

by RON SCHRAMM

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A fisherman of Inle Lake in Myanmar waiting for his last catch of the day.

- 4** ASIA IN THE AGE OF TRUMP: AN INTERVIEW WITH ANDREW NATHAN
Ling Han
- 8** AIIB:
CHALLENGES AND OPPORTUNITIES FOR SOUTHEAST ASIA'S CONNECTIVITY
Natasha Ardiani
- 12** BANKING THE UNBANKED:
CHALLENGES AND OPPORTUNITIES FOR DIGITAL FINANCIAL SERVICES IN INDONESIA
Jocelyn Chiao-Yun Chu
- 15** SHADOW BANKING:
THE LONG SHADOW OVER CHINA'S GROWTH PROSPECTS AND THE GLOBAL FINANCIAL SYSTEM
Ron Schramm
- 25** NORTH KOREAN ECONOMIC SECURITY IN THE CONTEXT OF MULTILATERAL SANCTIONS
Charlie Chung
- 30** JEOPARDIZING "ONE BELT, ONE ROAD" FOR THE SOUTH CHINA SEA
Andrew Yei Liu
- 32** THAILAND'S CYBERSECURITY BILL:
A STEP FORWARD OR TWO STEPS BACK?
Jittip Mongkolkeha
- 34** UNHACKING ASIA-PACIFIC:
REGIONAL CYBER INSECURITY AND ECONOMIC SECURITY
Sherman Chu
- 37** TROUBLED WATERS:
RESOURCE SCARCITY ALONG THE MEKONG RIVER
Rachel Hulvey
- 41** RECONCILING ECONOMIC SECURITY AND AGRICULTURAL SELF-SUFFICIENCY
Xinyi Gu



ASIA IN THE AGE OF TRUMP

An interview with Andrew Nathan
by Ling Han

What effect will the Trump Administration have on China's "salamislicing" tactics in the South China Sea?

My sense is that China has finished its island build-up in the South China Sea (SCS) and wasn't planning to build any more islands. (It might have tried to build on Scarborough Shoal but its détente with the Philippines' Duterte has made

that unnecessary for now.) The long-term objective was to have a stronger and larger role in the SCS, and to gain more control over the sea lanes and lines of communication. However, I don't think China's strategy was ever to try to completely control the sea lanes. The buildup sent a message to Asian countries that "we are here and we are strong." In addition, I think that we would have witnessed more tilting from the other regional players. As we've already seen, Cambodia, Laos, the Philippines, and Malaysia are all, in various ways, tilting more to China and are becoming more accepting of China's dominance in the region. The United States would have likely continued its freedom of navigation operations and the region's status quo would have been preserved – a status quo of high tension and friction between China and the U.S. to be sure, but not a situation on a steady path toward confrontation.

However, Trump, in his phone call with Tsai Ing-wen hinted at a tougher line with China. If the U.S. were to persist on this path, then I would expect sharpening confrontation with China, focused on Taiwan but perhaps also expressed in the South China Sea – because naval presence in the South China Sea would be important if a war over Taiwan were to break out.

Yet, Trump is unpredictable, and despite his early statements he may pursue a more cooperative relationship with China in order to seek economic advantages.

You mentioned how Trump may pursue a more assertive agenda in the region. How will this align with the US withdrawal from the Trans-Pacific Partnership (TPP)? What kind of space will this create for China? Will we see the possible rise of another Asian power, such as Japan? Will this lead to a stronger regional competition for power?

It is difficult game to try to speculate about what Trump's Asia policies will be, and to make sense of them, but I agree with the implications of your question. If Trump thinks that he is going to beef up the American military presence in the region while at the same time not pursue trade and investment ties, then he will be pursuing divergent policies. However, it is plausible to suggest that he has to tell his voters in the red states that he

has thrown away the TPP, but at the same time, understanding that our economic presence in the region is important, he may revive the TPP in a different form – through bilateral trade agreements or with a different name.

How do you think China's relationship with North Korea will evolve?

Over the past year, China voted in the UN Security Council to increase the sanctions levied against North Korea. While the language of “blood brother” is sometimes used in reference to China’s relationship with North Korea, it amounts to a claim on the part of the Chinese that North Korea owes them a lot. But the relationship has always been onerous from Beijing’s point of view.

After Mao died, and China embarked on reforms under Deng Xiaoping, China believed that North Korea should follow a similar pattern of reform. The North Korean leader at the time, Kim Jong-il, refused to accept Chinese advice and pursued nuclear and missile programs, kidnappings, counterfeiting, and a dynastic succession. All of this, the Chinese disapproved of. The Chinese did not believe that North Korea’s policies were either socialist or civilized. This was partly because

it caused, and continues to cause, trouble for China on its border. This dissatisfaction has only deepened with Kim Jong-un, who is disrespectful of China and behaves in an un-Confucian manner -- as demonstrated by the order to execute his own uncle.

However, the Chinese are realistic about North Korea and the reality of Kim Jong-un’s reign. The destabilization of the North Korean regime would be costly to China. They don’t like the current situation, but they prefer to live with it, rather than see a collapse of the regime. The sanctions they have agreed to are quite measured, meant to send a signal without causing too many repercussions. That’s why the sanctions have something built into them called the “livelihood exception,” which means that the sanctions should not threaten the livelihood of the North Korean people. While the livelihood exception is meant to avoid worsening the already existing humanitarian disaster in the country (like what happened in Iraq), it also allows the North Korean regime to avoid feeling deep pain from the sanctions.

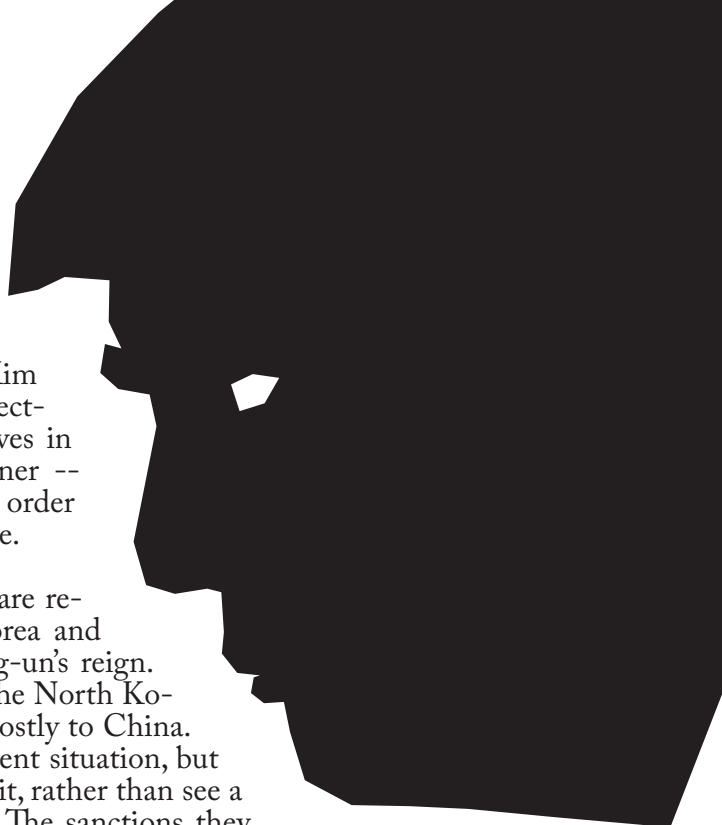
Shifting gears to cyber security, what do you think it would take for China to agree to a cyber security agreement with the rest of the region, or even the U.S.?

This term, cyber security, covers a breadth of issues, some of which are areas of common interest and some of which are areas of competition. As such, I don’t think there is a single answer to this issue. Many of the issues in this domain are adverse rather than cooperative. With respect to protecting one’s infrastructure from hostile action, the interests are definitely more adverse. Each country would like to be able to penetrate and threaten the cyber infrastruc-

ture of every other country. As such, it falls primarily to one’s own country to protect one’s infrastructure.

When it comes to the notion of the freedom of the Internet versus information control, interests are also very adverse because different countries have varying norms of freedom of speech versus censorship. I don’t see much chance for countries to agree to common norms regarding Internet freedom or censorship.

When it comes to the use of cyber for national security espionage, again the relationship is entirely adversarial and the burden is on the target to defend itself. But when it comes to commercial espionage (the stealing of commercial se-



crets via the Internet) there is room for common interests to align. This common interest is not so easy to achieve, however. The country that possesses the more valuable cache of commercial assets is the one that has the incentive to protect its intellectual property. Up until very recently, that has been the advanced Western countries. However, China is advancing in science and technology and in the possession of valuable brand names. Since the 1980s it has agreed to an increasing number of international conventions to protect intellectual property. I think common ground can eventually be found between China and the West to restrict industrial espionage.

As Trump begins his first term, Xi Jinping is beginning his second. What do you think the theme will be for his second term? What are the possible implications for other countries?

I think the theme for the second term is the same as the first: The realization of the “Chinese Dream” -- to be moderately economically prosperous by 2021. This involves a continuing focus on economic development, anti-corruption, and political discipline—all things he has already been working to advance.

There are several major economic challenges that he currently faces. The State-Owned Enterprise (SOE) reforms that were outlined in the 18th Party Congress (the 60-Point Reform Plan), which have not proceeded very far, and the slowdown of the economy are

perhaps the most notable of these challenges. As for another issue that is often mentioned, the credit overhang, I think the regime will continue to manage it without a financial crisis. One tool to keep the Chinese economy pushing forward is the One Belt, One Road initiative, which will generate export demand. It is like Donald Trump’s infrastructure project, but overseas. The objectives are to gain political influence abroad while at the same time generating jobs in China — even though there is tremendous risk that many of these projects will fail to be profitable. However, profitability seems to be a third consideration after the creation of influence and economic demand.

In short, I think the theme for the second term will be to continue the rise of China.

The SCS is one of the most important energy trade routes in the world. Are the stakes too high economically for the countries in the region to get into a possible conflict? There is a lot of dependence on energy imports and so if there is increased provocation in the SCS, will countries look more towards diversifying their sources of energy?

Energy diversification is happening anyway. China is building nuclear plants, hydro plants, and solar facilities. Japan is also developing new technologies. This is a trend of its own.

I don’t think that the tension in the SCS will drive this trend. If there were to be a conflict in the

SCS, the fact that it would be a naval conflict would limit its impact on trade.

At most, there might be a temporary interruption in the supply of oil across the shipping lanes. Moreover, unless we drift into World War III, any such battle of this type would be escalation controlled and would remain limited in scope.

The size of the SCS combined with the nuances of naval combat are unlikely to drive the demand for alternative energy sources.

What do you identify as the single most important issue that relates to economic security in the region?

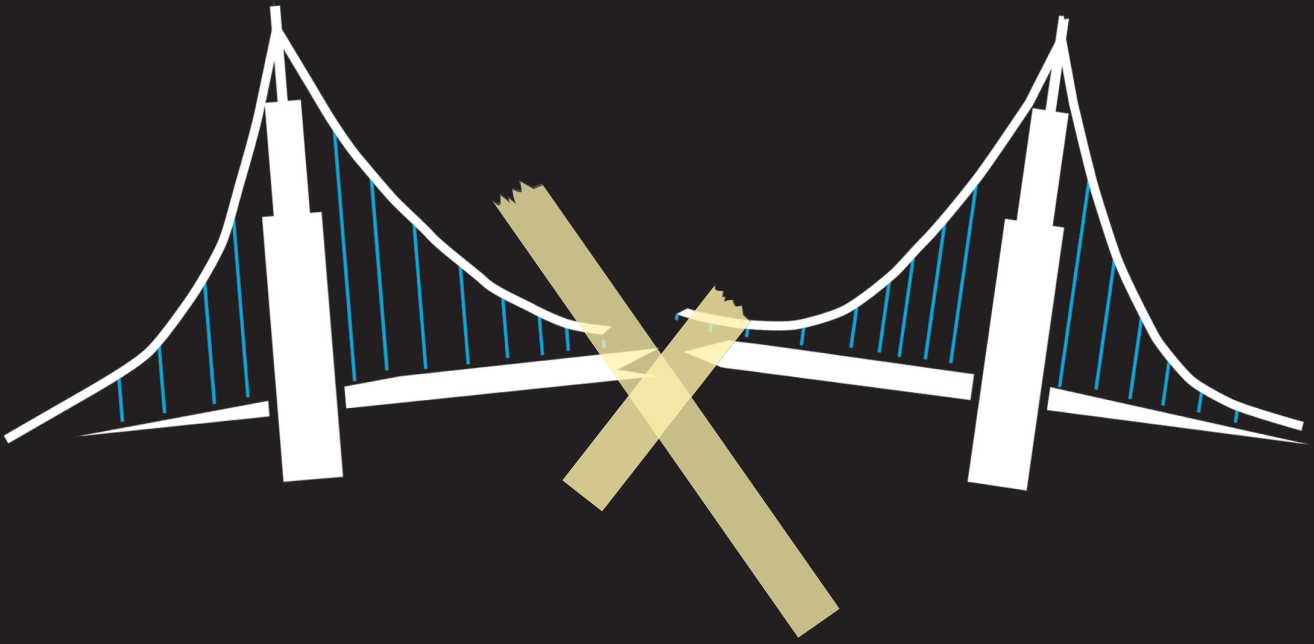
Most of the scenarios that I can think of that would severely challenge the economic welfare of countries in Asia-Pacific arise from destabilizing the balance of power in the region. There are a lot of flashpoints, tension and risk areas in Asia, but Asia has been relatively stable for several decades. This has allowed widespread economic growth throughout the region.

If we are to see destabilization of the political and security environment in some way, (e.g., a political crisis over Taiwan, or years of uncertainty about the U.S. treaty commitment to Japan and South Korea, or Trump thinking he can push China around in a so-called trade war) it seems to me that they could all have a severe impact on countries' economic growth.

Another factor that could affect welfare broadly throughout the region is the collapse of the Chinese economy. There are currently various challenges in the Chinese economy, the reduction of exports, the rise of labor costs, the environmental cost on the GDP, the credit bubble, the infrastructure bubble, etc. If these issues are mismanaged, the Chinese economy could have what some call a "hard landing." This would affect everyone else in the region. However, I am not one of the pessimists on this issue. I think the Chinese economy is sufficiently insulated unto itself, that is, the government has enough control over credit, exchange rates, land and other resources that it can find ways to prevent the "hard landing" from taking place. ☯

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AIIB: CHALLENGES AND OPPORTUNITIES FOR SOUTHEAST ASIA'S CONNECTIVITY

by Natasha Ardiani

The Asian Infrastructure Investment Bank (AIIB) was established as a new multilateral bank originating out of exasperation over the current slow-paced economic governance reform at the International Monetary Fund and World Bank. AIIB has openly declared its intention to help overcome Asia's infrastructure financing gap that is estimated at \$8 trillion between 2010 and 2020. This initiative bodes well with the Association of Southeast Asian Nations (ASEAN)'s adopted Master Plan for ASEAN Connectivity that strives to facilitate better access for peoples, capitals, trade, and investment within ASEAN, and between ASEAN and the rest of the world. It is also an instrument for China to realize its "Silk Road Economic Belt" and the "One Belt, One Road" (OBOR) initiatives. Additionally, the AIIB allows China to recycle its foreign exchange reserve holdings and to reduce the share held in the form of U.S. Treasuries (Raby, 2015).

1) China's prioritization of commitments

China's increased commitments abroad in global and regional affairs will have a tremendous impact on AIIB's progress. China's involvement in AIIB, the Silk Road Infrastructure Fund, the BRICS Bank the New Development Bank and China-led trade initiatives are efforts to expand China's leadership. Many of these organizations absorb China's economic and political capital. Which commitment they choose to honor and prioritize will determine AIIB's next move.

2) Managing partnerships with other development banks

AIIB's ability to streamline its projects with those of the World Bank and the Asian Development Bank (ADB) is crucial to avoid redundancies. AIIB and other development banks can pool experience, expertise, analytical capacities, and co-financing opportunities to expedite infrastructure development in the region. If AIIB can manage a diverse network of partnerships among multilateral development banks with all banks pursuing high quality practices and adhering to the same principles, it will encourage fair competition among countries and bidders.

On China's side, Beijing has long planned to build approximately 50,000 miles of high-speed railways involving 65 countries, linking East Asia, Central Asia, Europe and the Middle East (Zhu, 2015). The OBOR initiative is estimated to need \$1.4 trillion and AIIB will be one of its financing arms, in addition to the Silk Road Fund and the New Development Bank or the BRICS (Brazil, Russia, India, China, and South Africa) Bank (Acharya, 2015). Meanwhile, the Master Plan on ASEAN Connectivity (MPAC) strives to integrate 10 Southeast Asian nations with over 600 million people and total GDP worth \$2.3 billion. ASEAN established an ASEAN Infrastructure Fund of \$485 million and relied on domestic resource mobilization and a public-private partner-

ships mode of financing (ASEAN, 2010). The MPAC has 15 priority projects including the ASEAN Highway Network, the Singapore-Kunming Rail Link, the ASEAN Broadband Corridor, and ports in Indonesia (ASEAN, 2012).

At the moment, 30-40% of infrastructure funding in Southeast Asia comes from the public sector, 10-12% comes from banks, leaving more than \$60 billion per year to be covered by the private sector (Das, 2015). AIIB presents an unprec-

edented opportunity for China's immediate neighbors, the 10 ASEAN countries, to meet their infrastructure demands estimated at \$596 billion (Goldman Sachs, 2013).

The following 6 factors will allow ASEAN to effectively capitalize on AIIB:

**30-40% OF
INFRASTRUCTURE
FUNDING IN SOUTH-
EAST ASIA COMES FROM
THE PUBLIC SECTOR.**

3) A unified voice within ASEAN

The relationship between ASEAN and China is highly mutual and strategic. China needs ASEAN's support and buy-in and ASEAN needs China's support to overcome infrastructure deficiencies. AIIB offers ASEAN a myriad of opportunities to deepen regional integration and boost economic growth within the region. However, ASEAN will maximize its benefits from AIIB if and only if it can have a unified voice on navigating project prioritization, funding allocation, and agreeing on mutually beneficial business models, especially for cross-border infrastructure projects. One project that can be identified is the Singapore-Kunming Rail Link, spanning 7,000 km and connecting Kunming, China with seven ASEAN countries - Singapore, Malaysia, Thailand, Vietnam, Cambodia, Laos and Myanmar (ASEAN, 2010). China has a stake in leveraging AIIB to bring the completion of the Singapore-Kunming Rail Link to fruition, linking China to ASEAN ports and offering alternate access to strategic shipping lanes while reducing supply chain barriers (Metriyakool, 2015).

4) Availability of bankable projects amidst global economic slowdown

China has been a competitive player in Southeast Asia. Its biggest trading partner, over 12% of China's exports are sent to the region. However, China experienced a major slump in exports in 2015 and 2016 when global commodity prices plummeted. Prior to the slowdown, Southeast Asia - except for Singapore and Malaysia - already lacked bankable projects due to the lack of a credible public-private partnership (PPP) framework, deficiency in regulatory regimes and a legal environment for contract enforcement, lack of transparency for monitoring project implementation, and political uncertainty (Yue, 2016). It will be more challenging this time around.


5) Lack of creditworthiness

Investors in the region are often cautious about investing in Southeast Asian companies because a majority of Southeast Asian countries have poor credit ratings (Standard & Poor's, 2012). Many projects may seem promising in the beginning but become difficult to pursue (Zhu, 2015). Agreements on infrastructure projects are usually reached at the central governmental level, while local governments are in charge of implementation. Problems arise when local governments' interests are not aligned with those of the central government, and when they lack capacity or do not cooperate with foreign investors. Some efforts have been made to rectify the situation. In 2003, ASEAN+3 (China, Japan, and South Korea) established the Asian Bond Market Initiative (ABMI) to create a more efficient and developed Asian bond market to leverage the high savings rate in the region (KPMG, 2014). Nonetheless, much work needs to be done to further develop the capital market structure and increase investor confidence.

6) Lack of certainty

Foreign investors, development banks, private banks, and other private entities entering the Southeast Asian market with long-hold FDI commitments often become weary with issues such as policy uncertainty, political uncertainty and regulatory uncertainty (Henisz and Benner, 2010). They are faced with ad hoc changes in laws governing investment and business (e.g. coal investment in Indonesia) and political uncertainty (e.g. the 2014 and 2016 political coup in Thailand). Other common challenges include complexities in land acquisition, rights of way, rehabilitation, and resettlement, permitting delays and environmental challenges (Ray 2015). These uncertainties, coupled with lack of institutional capacities increase the risk profile of infrastructure investments and the cost of providing private capital to help fund public infrastructure. In the latest World Economic Forum's Global Competitiveness Index (2016), only four out of the 10 ASEAN countries ranked in the top 45, namely Singapore (2), Malaysia (20), Thailand (34), and Indonesia (41).

Conclusion

As an emerging regional and global player, China has long played an active role in supporting infrastructure financing in Asia. If ASEAN could leverage its unique position within AIIB it could help mobilize private sector financing and bridge the gap between investors and viable projects. Moving forward, Southeast Asian countries need to undertake internal structural changes to better improve their credit rating, infrastructure, and labor quality, as well as regulatory and business certainty. 

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Banking the Unbanked:

**CHALLENGES AND OPPORTUNITIES
FOR DIGITAL FINANCIAL SERVICES
IN INDONESIA**

by Jocelyn Chiao-Yun Chu

Greater financial inclusion is inextricably linked with development. Financial inclusion, defined as access to formal financial services, is essential for macro financial security and the promotion of inclusive national economic growth. A World Bank study estimated that a 1% increase in financial inclusion facilitates a 0.3% annual GDP growth rate.¹ On an individual level, access to credit, savings, and other financial services smooth financial instability while increasing earning potential. For example, businesses start and expand, while families save and plan for school and health care expenses. Communities are empowered to take control of their own financial futures. Indeed, the benefits of banking are catching on among the unbanked and underbanked. The first global commitment to financial inclusion materialized in 2011 when financial actors and policy makers signed the Maya Declaration.² Since then, between 2011 and 2014, 700 million people have gained access to formal financial institutions.³


Yet banking an entire population, especially in developing countries, is far from easy. Indonesia is the largest economy in Southeast Asia but has one of the lowest financial inclusion rates in the world. Only 36.1% of adults aged fifteen and over hold a bank account, and this drops to 22.2% when looking at the country's poorest 40%.⁴ In fact, bank users are mostly male, particularly urban, and above the \$2.50/day poverty line.⁵ Poor, rural inhabitants, particularly women, in Indonesia lack access to the financial system that is dominated by large commercial banks. As a result, income disparity remains high. The unbanked and underbanked have less resources at their disposal for productive investment and consumption. Indonesia is the world's fourth most populous country and its large, unbanked populations represent an untapped resource, one that could fast-track its development in a more sustainable and inclusive way.

One of Indonesia's largest barriers to financial inclusion rests within its geographical diversity; the nation contains over 17,000 islands. This diversity coupled with Indonesia's underdeveloped national transportation infrastructure results in high cost barriers for banks establishing branches in rural or remote places, where around half the population lives.⁶ Therefore, the country's large commercial banks, operating on the need to see adequate returns for their investments, have not sufficiently expanded their clientele. To reach the country's unbanked and underbanked, it must leverage the tools within their disposal. The most promising ones are information and communications technologies (ICTs).

ICTs, like mobile phones, can bridge long distances, effectively reducing the need to bank at brick and mortars. Funds can be transferred with a few clicks and withdrawn through a local partner (like a store or airtime top-off booth). Indeed, recent success stories in reforming the financial sector to include rural populations have centered around digital financial services (DFS). For example, M-Pesa, a Kenyan mobile money banking service, has drastically increased financial access.⁷ As in Kenya, access to ICTs in Indonesia has experienced exponential growth over the last 5 years. In 2015, 79% of the Indonesian adult population had access to a mobile phone,⁸ and mobile access is continually growing. Indonesia's youth are driving the uptake of information and communication technology (ICT), while being the first to adopt new technologies.⁹ This bodes well for the future of mobile use. Given the country's rapid population growth¹⁰ and the proliferation of mobile phone ownership, it is very likely that mobile penetration will reach 100% by 2020.¹¹ Furthermore, phone ownership equates with competency; nearly all mobile owners can perform basic functions, including the ability to send and receive text messages.¹² Thus, a simple mobile money system where users only need to send SMS messages to transfer and receive money is unlikely to encounter problems in user capability.

DFS services, however, could potentially run into barriers due to regional, economic, and social inequalities. One could hypothesize that rural and lower class Indonesians do not have equal access to mobile devices. In 2005, in response to this concern, Heimerl et al. performed a study in rural regions of Papua, one of Indonesia's lowest financially included islands, to study this divide. This study's conclusions are surprising; due to "advances in inexpensive cellular systems" and devices, "smartphones are being adopted just as quickly in even the most remote regions in Indonesia."¹³ Indeed, the rapid dissemination of cell phone technology, even in the world's most remote areas, is a global trend due to its affordability, convenience, and demand. Wireless Intelligence reported that mobile penetration is spreading exponentially; it took twenty years to sell the first billion cell phones, four years to sell the next billion, and two years to sell the last third.¹⁴

At the same time, mobile ownership does not equate with awareness of mobile financial services (MFS). In fact, despite areas of progress and the greater reach afforded by ICTs, Indonesians remain largely financially illiterate, unaware of mobile money, and distrustful of digital money. Unfortunately, awareness of MFS in Indonesia rests at 8% of the population.¹⁵ While this is an advancement from 2014, where only 6% of Indonesians were aware of mobile money,¹⁶ at this rate it will take another 45 years for all Indonesians to know of this available financial service. Due to the lack of public awareness, many Indonesians are skeptical of ICTs, especially of their ability to perform financial transactions. Indonesians' wariness of electronic money has consequently resulted in the economy remaining cash-based.¹⁷

Nevertheless, it is encouraging that the market growth of ICTs is much more inclusive than the formal banking sector. At the same time, there are still hurdles to cross in the spread of DFS. While there are many potential solutions to spreading awareness and trust, it is clear that initial investment is needed, most notably in efforts to educate and sensitize the public. For example, since bank branches are so difficult to establish and run, single agent posts set up across rural areas have the potential to reach the historically ignored, perpetuating low DFS awareness and trust in rural areas. All in all, it is only when Indonesia enjoys more widespread ICT awareness and trust that it will be able to fulfill its massive digital potential. 

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SHADOW BANKING

THE LONG SHADOW OVER CHINA'S
GROWTH PROSPECTS AND THE
GLOBAL FINANCIAL SYSTEM

by Ron Schramm

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“Be careful what you wish for” may be an appropriate axiom for Western economists who conduct China related research. In the past, the lack of ways to hold wealth for China’s beleaguered savers has often been bemoaned as a critical bottleneck to China’s economic growth and future prosperity. Even as recently as 1994, over 70 % of China’s financial wealth was held in traditional banking institutions as deposits;¹ Chart 1 shows that over the years that figure has steadily declined to just under 50 %. The absence of alternative investment vehicles hindered the vital role that finance plays in an economy – channeling a nation’s scarce savings into its most productive use. Moreover, the absence of additional ways to diversify wealth caused disproportionate amounts of both personal and corporate savings to be channeled into property and equity markets or offshore, creating unsustainably high prices or pent up demand for other asset classes. In turn, fewer ways to diversify wealth holdings and reduce risk has no doubt led to even higher savings as a compensating buffer against uncertainty. Chart 2 shows how Chinese savers held their wealth compared to

the global financial crisis.² We generally refer to the non-bank financial sector for a country as its shadow banking sector.³ We could think of this part of the financial sector as either being “lightly” regulated or not regulated at all. Both dynamic and innovative, shadow banking institutions often excel at information gathering (the “coin of the realm” in finance) and providing specialized areas of expertise that investors desire. But its activities can be unduly risky with the potential for causing systematic risk – financial crises. The latter characteristic derives from the absence of a direct lender of last resort – the People’s Bank of China, a backstop that traditional banks do

Americans as recently as five years ago. We see money holdings (bank deposits) as having a disproportionate share of wealth holdings for Chinese compared to American (and other OECD economy) savers. Meanwhile, Americans continue to hold their wealth in a range of financial products – ranging from a plain vanilla mutual fund to a reverse home mortgage.

Fast forward to 2016: Since 2009 when non-bank finance was around 15 % of GDP, its share of importance has increased to about 60 % or around RMB 40 trillion (USD 6 tril-

lion). In absolute terms, financing in China from this sector has grown by a factor of 5 since

TRADITIONAL BANK DEPOSITS TO CUMULATIVE SAVINGS IN CHINA

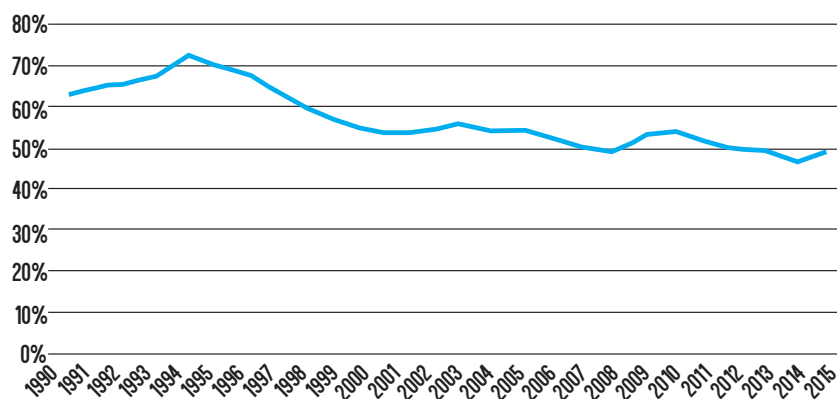


CHART 1

1 We loosely define financial wealth as national savings in China cumulated each year from 1982.

2 And in the decade following 2003, the sector has grown by an even larger factor estimated at over 30 times. Elliott, Kroeber and Qiao (2015).

3 Some definitions of shadow banking exclude insurance companies, pension funds and government sponsored investment vehicles. For China, however, we need to keep in mind that the latter category in China includes many government-sponsored venture capital (VCs) funds; and VCs are most often included in the definition of the shadow banking industry.

WALRAS LAW AND HOW WEALTH IS HELD

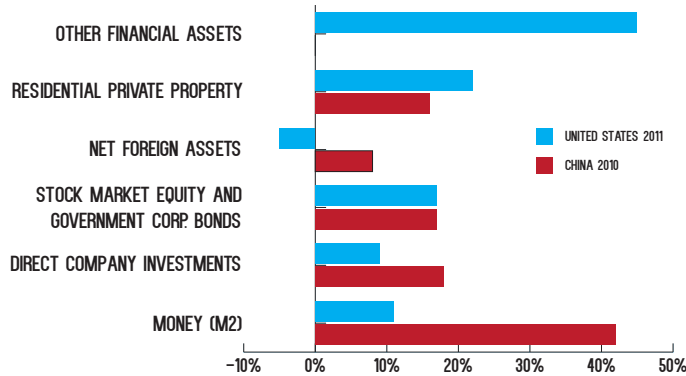


CHART 2

have. Furthermore, they operate without explicit government guarantees of principal invested, such as deposit insurance.

While China’s sector is still relatively small by international standards (the United States shadow banking share of GDP is estimated to be two to three times larger), its rapid growth and now globally significant size does raise some red flags. In this article, we will highlight special characteristics of shadow banking in China, the opportunities and risks they present and how we think the entire sector will evolve in the coming years. Throughout this discussion we need to keep in mind that financial intermediaries (whether bank or shadow bank) play the critical role of linking savers (individuals, companies and possibly governments) with

users of finance (companies, consumers and governments) on an ongoing basis both for short term working capital needs and long term investments. As China’s wealth grows, they also engage in the other critical role of “wealth management” for the sake of diversification, returns and financial planning.

In the following sections we discuss key institutions, instruments and magnitudes of shadow banking markets within the broader context of global financial risk. The potential for China to create systematic global financial risk came to the fore with China’s August 2016 awkward depreciation of the RMB resulting from offshore market forces. It was the first time a China-based financial event prompted a substantial hike in global market volatility as evidenced by a spike in the China Board of Ex-

change’s volatility index (VIX) (Arslanalp, 2016). Events in the shadow banking sector have the same potential for global disruption in the coming years.

Key institutions and activities in the evolving Chinese shadow banking landscape

One of the more recent and significant financial intermediaries in China is the innocuous-sounding *money market fund*, by now perhaps the most familiar non-bank institution among average citizens in China. Though present in China since 2003-2004, they achieved tremendous growth with the introduction of Internet banking. Alibaba’s evolution from internet goods market, to online payment mechanism (Alipay) to money market fund (Yue’Bao) is a lesson in adept responses to opportunities. The evolution of money market funds over the past five years from barely a “rounding error” in China’s financial system to over 200 firms managing RMB 4 to 5 trillion in assets is a tale of financial repression, technology and innovation.

In response to China’s “silent” banking crisis of 1998-2003, regulators implemented a series of measures to recapitalize China’s traditional banking system.⁴

4 In this period, China’s four largest banks (all state-owned) were sufficiently laden with bad loans (policy related) to push bank equity fully into the negative range. The crisis was silent because there were no bank runs and most of China’s citizens were unaware of the dire condition of their banks.

One such measure, relevant to our discussion, was the imposition of interest rate ceilings on deposits and floors on loans – effectively guaranteeing a spread of profitability to the effectively bankrupt banking system. While successful in returning banks to profitability, such forms of financial repression come at a cost – financial disintermediation. Money market funds provided an avenue for higher returns and liquidity. Bundled with Internet banking, convenience was thrown into the mix – 24-hour access to an account with only a few cellphone clicks needed. Viewed from another angle, money markets in China allowed for the pooling of the funds of many small depositors into one large deposit at banks by money market funds.⁵ Furthermore, money market funds could negotiate a deposit rate well above the regulated bank rate. Most money market funds, in turn, invest in banks which in turn invest in bond repurchase agreements in the interbank market.

In February 2016 China's Securities and Regulatory Commission (CSCR) tightened up on earlier 2004 regulations. The

new regulations, however, are still lax relative to international regulations of money market funds. Money market funds traditionally provide two main benefits: a preservation of capital, i.e., virtually no fluctuation in the value of the principal invested and related to that benefit, liquidity. Chinese money market funds have longer maturities that are less liquid and in some cases, make use of leverage and invest in riskier assets than would western style funds. In fact, several funds “broke the buck” or had a net asset value less than the principle invested in 2013.⁶ More troubling, some funds have in the past offered guaranteed (high) returns, something that is generally not possible for an asset with money market fund characteristics. No doubt, further regulations will be necessary as well as a renaming/reclassification of some funds as higher risk mutual funds.

Trusts are another institution which accept investments (minimum RMB 1 million) from wealthy individuals or institutions, invest in property developers, local government projects, stocks, bonds and other products offered up in the shadow

banking industry. They typically are linked to banks via a bank's Wealth Management Products (WMPs, discussed below) and in some cases, have banks as the major shareholder. They pay interest to their investors at an unregulated interest rate. In some ways, these trusts are like Private Equity (PE) firms found in the West, but the investment profile can be much more opaque. Unlike traditional PE firms, investors in trusts have implicit guarantees of capital preservation – a characteristic of debt rather than equity. They pool investments into structured WMPs to be offered to investors but with loose guidelines on what the nature of those investments will be. Trusts are descendants of the earlier provincial/local government sponsored Trust and Investment Corporations (TICs) discussed briefly below. Some of these earlier institutions went bankrupt.⁷

Wealth Management Products are short term financial products offered by both banks and trusts which yield higher floating rate returns than bank deposits while investing in a pool of assets ranging from money market funds to local government debt.

5 *The average deposit of Chinese depositors at Chinese banks is relatively small, about 1/10 of the size of an American deposit – imposing large fixed costs per asset in China.*

6 *Considered a singular event in US financial history, the Reserve Primary Fund “broke the buck” in September 2008 contributing to a liquidity freeze in US financial markets during the great financial crisis. (Luttrell, Rosenblum, and Thies (2012)).*

7 *The Guangdong International Trust and Investment Corporation (GITIC) raised funds internationally on behalf of the local government but by 1999 was unable to repay creditors and was shut down by the central government.*

CHINA'S TOTAL SOCIAL FINANCING AS A SHARE OF NATIONAL SAVINGS

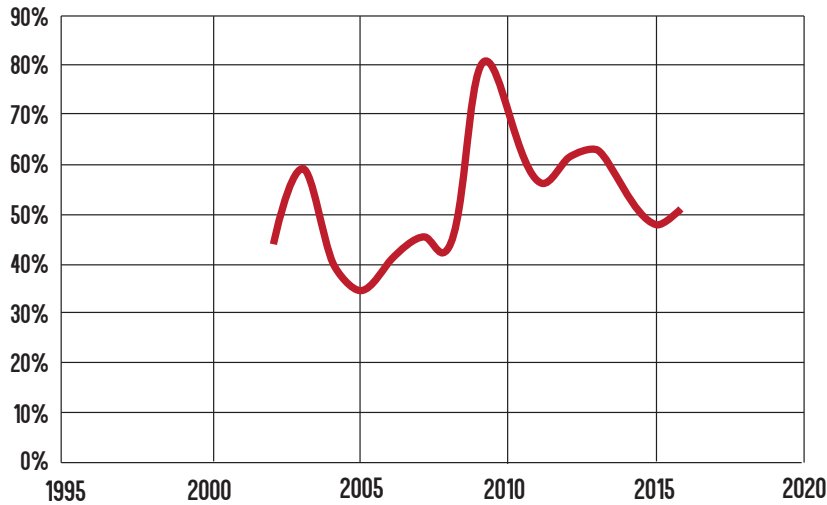


CHART 3

In this sense, they represent a form of securitization of underlying loans and investments but without the marketability (liquidity) that accompanies securitization that is typically found in the West. Of an estimated 9,000 wealth management

products currently offered across China by banks (at the start of 2009 there were only 176), about 60% do not guarantee the invested principal.⁸ For some WMPs, banks offer an implicit guarantee to “top off” the interest rate should returns dip below what investors had been explicitly or implicitly guaranteed. But many investors assume a firm guarantee is in place and wealth management products represent a significant portion (over 50 %) of the total value of deposits for some of China’s largest banks.

Another instrument in the shadow banking sector is company to company loans which are referred to as *entrusted loans*. Banks act as intermediaries or brokers for these types of loans where amounts, interest rates and maturities and counterparties are all customized. Uses of funds range from working capital to property development. The participation of the bank adds a level of comfort for both borrower and lender. Meanwhile, the transaction is typically off-balance sheet and allows for the bank to collect fees plus a share of the interest paid. Lin and Schramm (2006) estimat-

ed that about 1/3 of China’s savings in the period 1995-2005 could not be accounted for on a flow of funds basis and speculated that a significant portion of this represented intra-company lending.⁹ It now appears that this type of lending has moved from the undocumented

deep shadows to the better documented entrusted loan segment of shadow banking.¹⁰ Another area of financial repression is at play here; state-owned enterprises (SOEs) have traditionally had access to finance from the Big 4 state-owned banks at below market interest rates. SOEs can and do then on-lend these funds via entrusted loans. The potential for creating long chains of lending from SOE to end-user is great, as is the risk of some break (default) in the chain.

8 LI, Cindy. (2013).

9 LIN and Schramm (2009).

10 Excluding bank, stock and bond financing, shadow banking in 2014 made up about 23 % of all Total Social Financing (TSF) in China. TSF is a broad measure in China of all financial intermediation and is about half of national savings; it does not include the savings of companies (profits) that are retained and invested by the company.

Estimates of the size of shadow banking

Table 1 provides some rough estimates of the current size of each of these shadow banking sectors based on a variety of outside estimates.¹¹ The percentages sum to a higher share of GDP than our earlier estimate (87 % vs. 60 %) in part due to double counting especially across WMPs, Trusts and Money Market Funds. We however, have not included in the list other shadow banking sectors such as credit guarantors (who also lend), venture capital, private equity, hedge funds and peer to peer lenders. For this reason, our total in Table 1 may in fact be conservative. Notwithstanding the tremendous growth in absolute terms of the shadow banking sector, we see in Chart 3 that as a share of national savings, Total Social Finance (TSF) peaked during the financial crisis at 80 %. Since that time the share has dropped but remains significantly above the pre-crisis era. Among large economies, China has the highest savings rate in the world; and this latter phenomenon has been both a blessing and a curse in times of financial strain; a blessing in that short run difficulties have an adequate source of funding but a curse in that long run problems are allowed to fester.

2016 STOCK ESTIMATES OF SHADOW BANKING

PRODUCT	AMOUNT (TRILLIONS) AND ESTIMATED SHARE OF GDP
Wealth Management Products	RMB 26 (35%)
Trusts	RMB 18 (24%)
Entrusted Loans	RMB 13 (18%)
Money Market Funds	RMB 5 (7%)
Security Firms and Financing from Banks	RMB 2 (3%)
Total	RMB 64 (87%)

TABLE 1

EXPLAINING THE GROWTH IN CHINA'S SHADOW BANKING SECTOR

MACROECONOMIC AND FINANCIAL	FINANCIAL REPRESSION, POLICY DECISIONS AND MARKET FAILURE
Small and medium size enterprises lacked access to finance	Financial repression especially ceilings on deposits. Especially too high reserve requirements
Technological progress – a better internet technology to pool small deposits into large deposits (Money Market Funds)	Enforcement of the loan/deposit ratio (max 75%) for banks to lend to the real economy. Spurs all sorts of shadow bank lending including to securities firms
Banks and particularly the big 4 provided too few ways for savers to earn good returns and diversify risk	False promises (guaranteed returns) and lack of transparency and full understanding (of risks)
Vast savings of which 1/3 was undocumented on a flow of funds basis (LIN and Schramm (2009)	Regulatory arbitrage
Efforts at tightening 2008 monetary expansion led to tougher regulations and enforcement around 2010	Small banks disadvantages compared to big SOE banks
	Doubling of money supply during financial crisis added excessive market liquidity in search of yield
	1994 Budget Law squeezes local finance and triggers creation of local special purpose institutions

TABLE 2

11 LI (2013).

Reasons for the rapid emergence of shadow banking

Table 2 provides both some historical context and economic rationale for the rapid emergence of shadow banking. The left-hand column provides an economic and financial justification for such a system to develop. The right-hand column represents a series of policy decisions which in effect resulted in “the law of unintended consequences” or a shadow banking system to evolve. For example, an ongoing problem in China has been the lack of diversification opportunities on the deposit side for Chinese savers as evidenced by the dominance of the Big 4 state-owned banks. And on the lending side the same large institutions have traditionally lent to large state-owned or well-connected enterprises; meanwhile small and medium-sized enterprises have found it difficult to tap into financial markets for expansion. The emergence of shadow banking institutions simultaneously addresses both concerns in a significant way.

But financial repression has also played a major role in the development of shadow banking. We have already discussed interest rate ceilings and floors in the context of money market funds.

But an even earlier development in 1994 had a profound impact as well. A new national budget law that year severely constricted the flow of tax revenue to provinces and localities. At the same time, expenditure obligations, particularly on infrastructure, continued to rise dramatically for provincial and local governments. With no ability to issue bonds and caps on local borrowing, localities created and turned to land sales and Special Financing Institutions (including TICs and International TICs) for financing. The debt of these new financing institutions worked their way through China’s financial system becoming part of the shadow banking system we describe in this article. Later spurs to the shadow banking sector included a rule that banks could only lend up to 75 % of their loan portfolio) to the real sector of the economy – the rest was to be lent to nonbank financial institutions (read, shadow banking system). Enforcement of this rule began in earnest around 2010 to cool down some of the overheated sectors of the economy such as the real estate market, but, in fact, may have proved counterproductive since shadow banks stepped in aggressively to fill the financing vacuum.

Risks of the shadow banking sector in China

China's shadow banking sector has characteristics which in fact could describe any shadow banking sector around the world:

- It is not a beneficiary of government sponsored deposit insurance.
- It does not have any direct "liquidity backstop" that is a central bank line of credit such as a discount window to access when liquidity in financial markets dries up.
- It is either not regulated or lightly regulated compared to traditional banks.

In other words, shadow banks are not banks and are therefore much riskier for depositors than banks. But the average Chinese investor in the shadow banking system is not fully aware of the difference in risk between traditional and shadow banking.

In fact, there have been several cases where some shadow banking firms have made false claims of government connections or implicit government guarantees.¹² There is, however, at least one worrisome similarity that shadow banks have with traditional banks, a maturity mismatch – long term investments and short term liabilities; both have exposure to liquidity risk. Finally, the relationship between shadow banks and traditional banks is symbiotic – they rely on each other for deposits and investments.

These factors combine to create some clear systematic risks for both the Chinese and global economy. A loss in principal or liquidity squeeze (inability to liquidate investments in an orderly fashion) could propagate across the financial system (including banks) and of course the wider economy.

12 *New York Times. Deal Book (August 21, 2016).*

Broad macroeconomic concerns

While the short run possibility of a financial crisis triggered by some combination of maturity mismatch, a liquidity squeeze and corporate insolvency are an important concern, there are some other very fundamental concerns. One relates to the nagging question for China of the quantity of its growth versus the quality of its growth. We are asking here whether China's extraordinary growth rates represent ongoing value destruction or value creation. Just as companies such as General Motors can have impressive growth rates through the accumulation of assets yet still end up bankrupt, so too can countries. China's growth in recent years has been in an accounting sense largely driven by investment (the accumulation of capital). An open question is whether those investments were wise ones in a financial sense that will yield real returns for China's citizens/savers in an economic sense. Specifically, real estate investment makes up around 1/3 of all investment in China and stories abound of empty office and residential buildings.¹³ China's shadow banking industry is young and inexperienced but as we have

seen represents an increasing share of financial intermediation including lending to property developers and home buyers. There would appear to be plenty of room for mistakes. Especially, since the sector has been growing at double-digit annualized rates over the past decade.

Another broad concern relates to the implementation of monetary policy. China has historically relied heavily on changing reserve requirements for expansionary or contractionary monetary policies. This tool is rarely used in the United States but in China the reserve requirement has been adjusted over 50 times since 1984. Traditional banks are required to hold reserves but shadow banks are not. The PBOC would need to rely on a "trickle down" (diluted) effect to have the same impact on monetary conditions than would have been required eight or nine years ago. Perhaps, it is for this reason that the PBOC has experimented more with open market operations in search of a more direct and immediate impact on the real economy and inflation. Given some of the fragilities of China's financial system described above, it is likely that the PBOC's hand will be forced toward a policy bias of looser (inflationary) monetary policies rather than tighter policies.

13 *Office construction is particularly problematic. Given China's huge population one could envision financial solutions to the glut of residential housing, but empty offices may require some "repurpose" like solutions.*

Summary and outlook

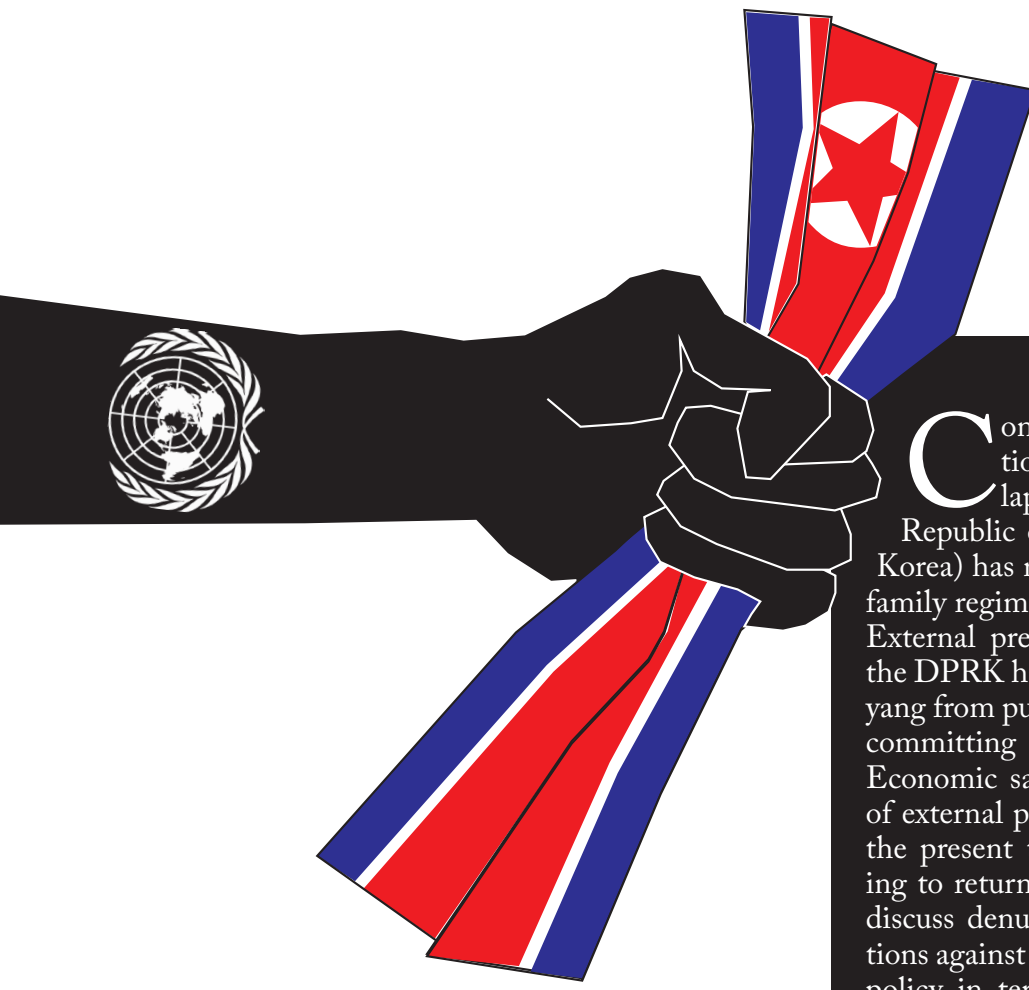
Shadow banking in China branches off into two fundamental directions. One is institution based where we have money market funds, trusts, venture capital and private equity firms and investment banks channeling funds directly into companies. A role similar but as we indicated different from traditional banks. The other branch is more related to asset management, involving securitization and the creation of marketable securities based on pools of underlying assets. WMPs and the use of repurchase agreements and working capital management all contain elements of securitization. I would suggest that the more successful (in terms of value creation) and less risky path for China is the former institutional based type of finance. This is

primarily related to legal and political institutions in China. LaPorta et al. (LLSV, 2008) suggest that common law countries such as the United States and United Kingdom can deal more easily with the dynamism of marketable security “arm’s length” types of finance. Courts are better able to cope in “real time” with financial innovation while civil law countries (Continental Europe) relying on legal codes are more suitable for “arms around” institution based financial intermediation. China, legally and politically, in a very clear way follows in the civil law tradition of rules and regulations. The role of courts acting as independent judges of what is fair and efficient in financial markets is an unlikely *modus operandi* for China in the coming years. 

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NORTH KOREAN

ECONOMIC SECURITY IN THE
CONTEXT OF MULTILATERAL SANCTIONS

by Charlie Chung

Contrary to numerous predictions of an imminent collapse, the Democratic People's Republic of Korea (DPRK or North Korea) has managed to sustain the Kim family regime for over three generations. External pressure and criticism against the DPRK have yet failed to stop Pyongyang from pursuing nuclear weapons and committing human rights violations. Economic sanctions are the main form of external pressure on North Korea. At the present time, Pyongyang is unwilling to return to the negotiation table to discuss denuclearization. Punitive sanctions against the DPRK is a questionable policy in terms of effectiveness. Today, the DPRK is perhaps the most heavily sanctioned state from a multilateral perspective, but it shows no signs of giving up its political priorities on *songun* (military-first politics) and *juche* (ideology of self-reliance).

United Nations Security Council (UNSC) Resolution 2321, the most recent and harshest UNSC sanctions resolution against the DPRK, was passed on November 30, 2016.¹ The latest round of sanctions will hurt North Korea's balance of payments with tighter restrictions on transportation and financial activities. Resolution 2321 imposes a volume ceiling on the DPRK's commercial activities to tighten the self-policed "livelihood exemption" in Resolution 2270, which allowed trading activities with the DPRK to continue as long as they were claimed to be civilian in nature.² Marcus Noland

estimates that the volume restriction will limit North Korea's coal exports to about \$400 million per year, thus shrinking the merchandise value of coal exports by \$650 million or 20% reduction in North Korea's total exports of about \$2.7 billion.³ An additional \$100 million in annual constraints are imposed on copper, nickel, silver, and zinc exports. However, considering that commodity prices have been decreasing over the past few years, the marginal impact of stricter sanctions on coal and other natural resources is likely to be small. It is also unclear if economic shocks from sanctions can affect the political stability of North Korea or if other countries, including China, want such an outcome.

Thus far, the DPRK has shown great resilience against the multilateral economic and financial restrictions imposed by the UNSC since 2006. After more than a decade of experience surmounting multilateral UNSC pressures, facing sanctions became a default condition for Pyongyang's political and economic security tools. This reality caused the North Korean regime to impose a wide system of insulating domestic policies that mitigate the negative effects caused by sanctions felt by the regime.

Why economic sanctions cannot denuclearize North Korea

Since the DPRK's first nuclear test on October 9, 2006, the UNSC sanctions against the DPRK have aimed to deter Pyongyang's further development of nuclear weapons. These multilateral sanctions will be considered successful should they lead to negotiations with Pyongyang on the process of denuclearization. The nuclear weapons program, however, has become existentially important to the DPRK in almost every aspect and there is virtually no chance under the Kim regime to give them up or engage in a negotiation on the condition of it.⁴ Under the current state of division since the Korean War Armistice was signed in 1953, the incomplete nation-building process posits the two Koreas in a perennial rivalry of legitimacy – a rivalry that hangs over both halves of the peninsula. In this geopolitical setting, it was a geostrategic decision for Pyongyang to pursue nuclear deterrence. When the Soviet Union collapsed in 1991, North Korea's socialist economic system was on the verge of total collapse and Pyongyang faced greater existential threat in the 1990s than at any time since the Korean War.⁵ To rival the economically and diplomati-

cally superior South Korea, its nuclear weapons program developed into a social contract and survival strategy, through which Pyongyang chose to seek domestic recognition as a legitimate "Korean" state that could provide security and stability to its citizens.

Nuclear deterrence lies at the core of the DPRK's domestic politics as the central pillar for national security and existential survival. This has become increasingly evident as the DPRK introduced a constitutional amendment on April 13, 2012. This amendment declared the DPRK a nuclear state, strongly insinuating that it has no intention to negotiate on the process of denuclearization.⁶ The unfortunate irony is that external pressures like sanctions further legitimize the state's nuclear social contract with its citizens and justifies the need to make sacrifices for national security reasons. The Kim regime is likely to have expected additional UNSC sanctions after the fourth nuclear test in January 2016. In turn, Pyongyang uses international criticism and pressure to demonstrate external hostility against the DPRK and justify that nuclear deterrence victoriously protects its state from hostile military forces. Robert Carlin claims that it was in Kim's "playbook" to expect more sanctions and to credit nuclear weapons for successfully

avoiding a military escalation on the Korean peninsula.⁷ Harsh criticism and punitive measures against nuclear North Korea are likely to help Pyongyang to further justify its militarism and nuclear weapons development. In short, the DPRK uses nuclear provocations to consolidate the legitimacy of the Kim regime while expecting external pressures in return as a default condition that emerges from the persistent hostility of other states, namely South Korea and the United States.

Why economic sanctions cannot hurt the North Korean political economy

For North Korea, the years between 1994 and 1998 are known as the “Arduous March” period. During this time North Korea suffered a catastrophic famine that killed between 600,000 and 1 million people. As the North Korean government was unable to provide basic necessities, the socialist social contract began to disintegrate.⁸ In an effort to survive, “individuals, families, communities, and local authorities” engaged in market activities outside of the traditional central planning system.⁹ The 1990s is thus regarded as an important turning point that instigated a structural evolution.

On July 1, 2002, Pyongyang introduced the July 1st Economic Management Improvement Measures that decriminalized informal markets, increased the overall official price level to reflect the scarcity in the economy, and devaluated the North Korean won.¹⁰ These measures are momentous in the North Korean economy as the state officially decriminalized, albeit partially, market activities that the people voluntarily initiated. Socialist dogmatism was not in Pyongyang’s economic interests. Unlike its political rhetoric that antagonizing capitalism, the North Korean state has demonstrated an ability to make a rational decision by adapting to the marketization phenomenon. Such rational adaptability and willingness to manage marketization provide a political setting that enables shock management.

In addition, China plays a significant role in mitigating sanctions pressures as the DPRK’s largest trading partner. Park and Walsh point out that Iran was vulnerable to sanctions due to its dependency on international sales of oil and ties with the global financial system, whereas the DPRK relies on China as the primary client nation for its coal and commodities trade with payments made in its onshore accounts within the Chinese national

economy.¹¹ Multilateral sanctions imposed on North Korea do not extend to bank accounts within China. Secondly, even the most recent sanctions imposed by UNSC Resolution 2321 exempts North Korea’s coal sales should they be related to economic development ends. Simply put, trades related to the civilian economy are still exempted from sanctions. Given that almost every governmental organization in the DPRK relies on markets and trade, including the military, tracking every dollar earned by the DPRK is nearly impossible. Considering that Sino-DPRK trade is about \$7 billion, or more than 70% of North Korea’s total trade, China’s strict enforcement of sanctions would virtually dismantle the North Korean economy and exacerbate already dreadful human rights conditions. Such an outcome, however, is not in Beijing’s national interest. Weakening or collapsing North Korea would cause a refugee crisis that would put immense economic and political pressure on Chinese entrepreneurs and local governments. For China and its local entrepreneurs, a stable and lucrative nuclear North Korea is much less troublesome than an unstable and collapsing North Korea.

Why economic sanctions cannot weaken Pyongyang's control over markets

For Pyongyang's economic policymakers, external pressures trigger heated debates on how economic management should be governed and they usually favor hardline policies rather than further experiments with markets.¹² Lister¹³, Eberstadt¹⁴, and Noland¹⁵ suggest that Pyongyang aimed to achieve at least some degree of de-marketization and socialist orthodoxy. For instance, Pyongyang ordered a confiscatory currency reform in 2009 that redenominated the economy by devaluing its currency by 100 to 1. Such seemingly decapitalizing monetary policy limited market activities of average citizens, thus limiting their economic activities outside the official state-monitored economy where price changes do not happen overnight.

Announced on November 30, 2009, currency reform followed a series of external pressures. South Korea elected President Lee Myung-bak from a conservative party in 2008 and multilateral sanctions intensified after the second North Korean nuclear test in May 2009. External pressures and sanc-

tions do affect the DPRK, but Pyongyang responds by imposing harsher restrictions on individual market activities. Markets were increasingly becoming the main source of civilian goods for the majority of the population and new economic subjects of a nascent class of entrepreneurs known as "*donju*" were created outside the state's political and ideological monopoly of aforementioned "*songun*" and "*juche*."¹⁶ One crucial implication is that economic sanctions against the DPRK are associated with an inherent risk that the state may restrain the markets and prevent civilian economic activities.

In May 2010, Pyongyang conditioned its confiscatory policies by reopening retail markets and allowed private ownership of hard foreign currencies. However, the winners of the currency reform were state-owned enterprises and co-operative farms as it redistributed income from non-state actors who accumulated wealth through markets.¹⁷ Jungchul Lee argues that conditioning acts purposely created hyperinflation in the economy as pensions and wages of workers were given at pre-currency reform prices.¹⁸ In the midst

of rapid inflation, theoretically, winners in the economy are the ones who can produce goods and have access to hard foreign currency, namely farmers and state-owned trading companies in the DPRK. In this context, the currency reform was intended to cause inflation, through which the state redistributed income from private merchants and entrepreneurs to state-owned enterprises and farmers. This shows that external pressures like sanctions do not necessarily force Pyongyang to retrench its experiences with capitalism. Instead, external pressures have justified Pyongyang's efforts to take greater control over markets by redistributing wealth from individuals to farmers and state-owned enterprises. Lee suggests that the DPRK's control of foreign reserves flows has improved as the gap between official state and unofficial black market North Korean won/dollar rates in 2011 decreased from 1:38 to 1:28. Rather than weakening Pyongyang's economic control over market activities, external pressures like sanctions justify the state's use of abrupt economic forces to strengthen the control over markets to surmount macroeconomic shocks.

Conclusion

Although impossible, sanctions would be effective if they can completely isolate the DPRK from any foreign trade.¹⁹ The key reason behind the ineffectiveness of sanctions against the DPRK is not necessarily laxity of the sanctions or China's reluctance to comply with terms of sanctions, but the fact that the North Korean economy is already dislocated from the global market and financial systems. Sanctions against Iran are deemed relatively successful as the Iranian economy has a greater dependency on the international financial system as an international oil seller. Unless the North Korean economy becomes vulnerable to threats from being dislocated from global financial networks, economic sanctions are unlikely to cause damage at a level where Pyongyang cannot prevent an internal upheaval. However, policymakers must bear in mind that they are dealing with a state that has ample experience in surviving a catastrophic famine that killed up to a million people.

A hypothetical situation where North Korea does give up its nuclear weapons creates a lot of uncertainty. The real challenge with the DPRK is the lack of predictability on the Korean peninsula, rather than the global threat posed by its nuclear arsenal. Considering a long-term perspective, future UNSC resolutions against the DPRK should not be focused on denuclearization. Policy debates on North Korea should not be dichotomized between harsher sanctions and dovish diplomatic engagements. North Korea's nuclear ambition does not necessarily originate from a fanatic wish to fight against the "imperialist" U.S. and its "puppet" South Korean regime. Nuclear weapons are a survival tool for the North Korean state that rationally assumes that living with external pressures is a normal condition. The North Korean economy and society have evolved away from socialism and are familiar with utilizing markets. As living under multilateral sanctions is becoming a

default setting in the North Korean economy, Pyongyang has learned to use markets in ways that allow greater state intervention and control.

Recent UNSC sanctions do not make North Korea vulnerable. At the same time, lack of reliable economic data on North Korea makes it difficult to clearly understand how Pyongyang procures military equipment. This does not mean that the international community should radically change its stance on the DPRK's nuclearization and human rights violations. Instead, the UNSC may consider partially allowing a nuclear North Korea to participate in the global market, only up to the point and for the sake of better understanding the DPRK's trade relations, both quantitatively and qualitatively. This would be a prerequisite to maximizing Pyongyang's vulnerability to sanctions and constraining Pyongyang's political reliance on unconventional weapons. 

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Opinion

Jeopardizing “One Belt, One Road” for the South China Sea

by Andrew Yei Liu

China’s “One Belt, One Road”, a strategic economic outreach program aimed at expanding continental and maritime trade routes in East and Central Asia, Europe, the Middle East, and East Africa, relies on support from the same nations it is in conflict with in the South China Sea (SCS).¹ As such, China’s increasing militarization in the SCS escalates tension over disputed territories – ultimately impeding the realization of its Belt and Road Initiative.

The SCS is home to rich natural resources,² strategic shipping lanes, and several military installations. Approximately 40% of global seaborne energy trade and 25% of the world’s merchandise exports pass through the SCS.³

Seeking to assert its dominance in the region, China continues

to be involved in several disputes over territorial claims in the SCS. The disputes are motivated by two principles: (1) a country’s historical occupation and administration of its land features and (2) their right to the continental shelf and exclusive economic zones (EEZ), as prescribed by the United Nations Convention on the Law of the Sea.⁴ In defense of its SCS claims, Beijing has been increasing its military presence in the region, and its actions have triggered similar responses from other SCS claimants and the United States (US), who also has a stake in regional stability. These dynamics set the stage for miscalculated armed conflict between interdependent states that will, in the end, undermine China’s strategic goals.

China’s claim to the SCS is represented by a map with a

China should
military es
work towards
resolution

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Should preclude military escalation and work towards multilateral resolution in the SCS

nine-dashed U-shaped line that extends south to the coasts of Indonesia, covering over 80% of the area. However, this directly conflicts with the geographic claims of China's littoral neighbors: Taiwan, Vietnam, Philippines, Malaysia, and Brunei (claimant states).⁵ Heavily dependent on Middle East oil and economic growth, China is counting on the Belt and Road Initiative to diversify trade and energy access and to expand the Chinese economy; yet, the initiative requires participation from states opposing China's SCS claims. Collaboration with claimant states is pivotal to the maritime component of the Belt and Road plan.⁶


Despite the apparent contradiction in policy objectives, Beijing continues to resist movement towards resolution. China's reluctance breeds anti-Chinese sentiment and distrust – feelings only exacerbated by increased military activity in the region.

Moving forward, China has three viable options in the SCS. First, China can continue increasing its military presence. However, this invites increased US interference. In addition to its alliance with the Philippines, the US maintains naval instal-

lations in the region which form the crux of its power projection capabilities. Taken together, these events raise the likelihood of armed conflict. This will erode the potential for future cooperation between SCS nations and disrupt maritime trade – an outcome that will result in a global economic shock.

Second, China can reduce its military presence. However, this may embolden regional actors to pursue aggressive policy in the SCS, ultimately resulting in the same outcome as option one.

In the last and best option, China could maintain its current military posture and collaborate on a collective resolution. Since caginess may be misconstrued as weakness by PRC citizens, it is important for China to be clear that it is not making concessions; rather, it is exploring diplomatic solutions as a responsible world leader.

Considering the strategic objectives of the Belt and Road Initiative, China should preclude military escalation and work towards multilateral resolution in the SCS. This eases regional tension and avoids armed conflict, paving the way for “One Belt, One Road.” China can only benefit from this course of action. 

Opinion

Thailand's Cybersecurity Bill: A step forward or two steps back?

by Jittip Mongkolnchaiarunya

In January 2015, the Thai cabinet approved the Cybersecurity Bill drafted by the Electronic Transactions Development Agency (ETDA).¹ This is part of Thailand's push to foster the country's digital economy. The bill calls for several organizational and regulatory changes, but the most significant is the establishment of the National Cyber Security Agency (NCSA). The NCSA is a central state agency responsible for tackling cybersecurity issues to ensure an amiable and safe environment for online economic activities. However, due to the high potential for abuse of the NCSA's sweeping authority, it could encroach on citizens' privacy and, ironically, prove to be counterproductive to the government's efforts to boost Thailand's digital economy.

Conversely, the rising number of cyber attacks directed towards Thailand² suggest that

authorities of the NCSA are in fact necessary for protecting Thailand's burgeoning digital economy. The National Cybersecurity Committee (NCSC) is chaired by the Minister of Digital Economy and Society. Other Committee members include the heads of related ministries and councils and selected technical experts.³ The NCSC is authorized to give orders to all government organizations under other ministries.⁴ It is also within the NCSC's power to demand telecommunication operators hand over communications information without the need for a court order.⁵ Officials of the NCSA can access information on any platform without court orders if it benefits an operation for the maintenance of cybersecurity.⁶

However, the definition of cybersecurity in the bill is ambiguous. The term broadly includes "any measures and operations that are conceived

in order to maintain national cybersecurity, enabling it to protect, prevent or tackle circumstances of cyber threats which may affect or pose risks to the service or application of computer network, internet, telecommunications network, or the regular service of satellites in ways that affect national security."⁷ Yet, neither "cyber threats" nor "national security" are clearly defined. Furthermore, because NCSA enjoys the status of a juristic person, not a state division or a state enterprise, the NCSA officials may not be liable for any wrongful exercise of duties under Thai criminal law.⁸ Due to vagueness and legal loopholes, the bill provides the opportunity for potential abuses of power in the form of accessing private information of businesses and the public without their knowledge or permission.

As a result, citizen privacy may be infringed upon, making Thai

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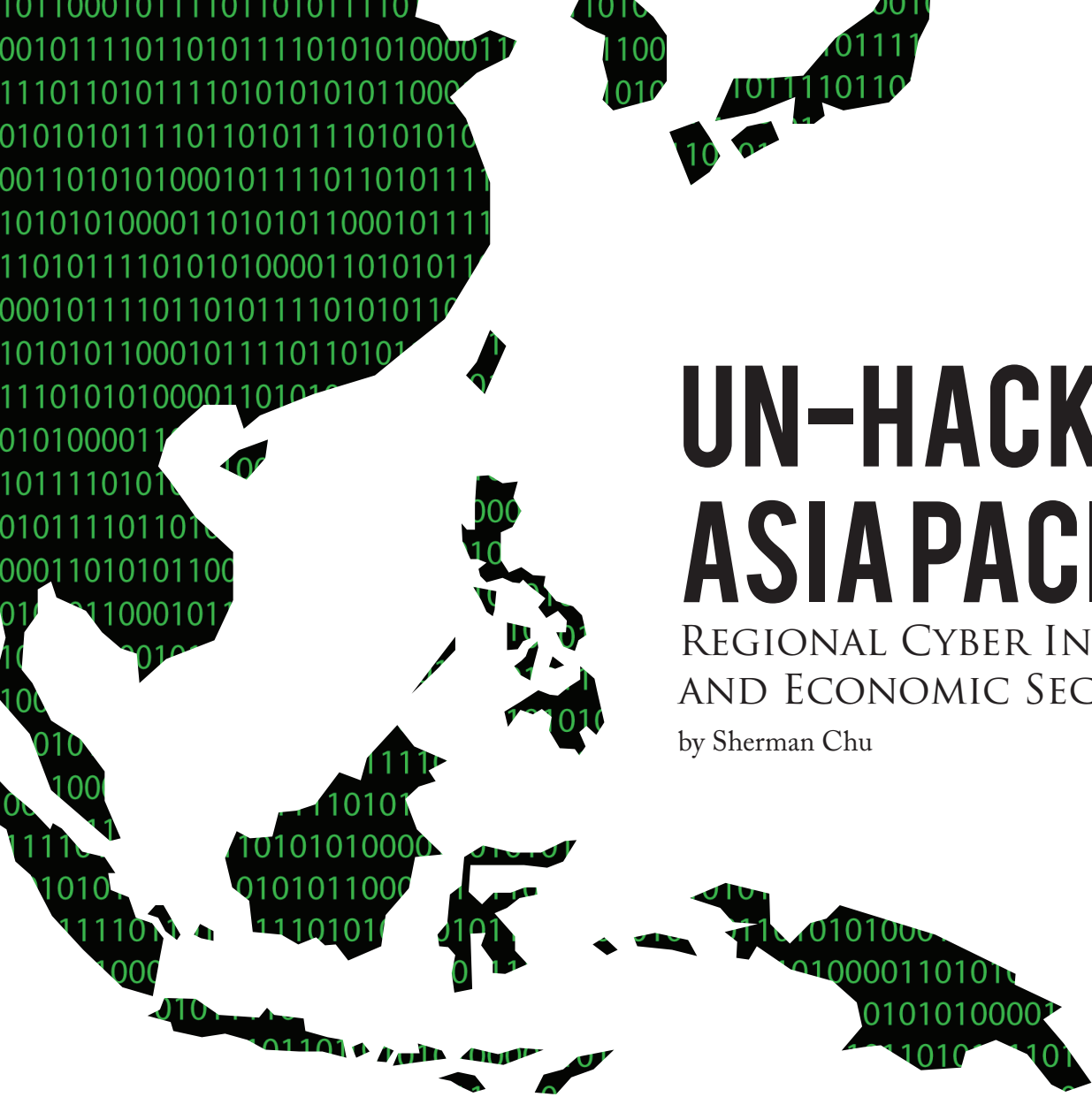
nationals reluctant to conduct economic transactions online. It also results in the hesitation of businesses to invest in the digitalized economy, since their information is possibly monitored without restriction and consequently hampers the development of the digital economy. The impact of Edward Snowden's revelations about the NSA's electronic surveillance programs on U.S. business is an example of what happens when businesses and private citizens no longer have information privacy online. Over the three years succeeding the disclosure, the U.S. cloud computing industry stood to lose \$22 to \$35 billion due to the mistrust of enterprises as to whether their personal data was kept private from the U.S. government.⁹

To prevent the aforementioned undesired outcome, ETDA should adjust the content of the Bill prior to submission to the National Legislative Assembly for approval by the end of 2017.¹⁰ Amendments should limit the power of NCSA officials and set up a well-designed independent agency to oversee personal data protection in order to ensure that a balance of citizens' rights and the

government authority is maintained. Although the Personal Data Protection Bill, which is also under ETDA's scrutiny, will result in the establishment of the Personal Data Protection Committee, this committee is unlikely to be effective in checking the NCSA's powers. This is because the NCSC will prejudice security over privacy, given the comparatively high number of Committee members from the government and military sectors.¹¹

Trust is vitally important for growing the digital economy

Trust is vitally important for growing the digital economy – perhaps, even more critical than any other types of economic systems – since any transaction in the system, by nature, is invisible to those who make it. To build trust, the public needs to be assured that personal data will be neither leaked, hacked, nor monitored. Following this logic, while the Cybersecurity Bill primarily focuses on securing cyberspace, it ignores and even sacrifices the protection of personal data privacy. For as long as the bill cannot maintain the right balance between the two principles, Thailand's digital economy is highly unlikely to flourish. 



UN-HACKING ASIA PACIFIC:

REGIONAL CYBER INSECURITY
AND ECONOMIC SECURITY

by Sherman Chu

Information technology (IT) has undoubtedly become an integral part of modern society. This increased reliance on digital networks has heightened the risk of cyberattacks and the severity of damage from hacks. A simple Distributed Denial of Service (DDoS) attack can cripple a country's internet service. At a more sophisticated level, a targeted cyberattack can disrupt critical infrastructures, causing immense economic and physical damage to a nation. Jack Jarmon wrote that the economic engine itself had become a prime target, and disrupting the engine simultaneously disrupts national security. This engine includes critical infrastructure, intellectual property, and the stability of the markets.¹ Additionally, the economic engine is vulnerable to non-traditional attacks such as cyber attacks.

Within the realm of cybersecurity, a country is only as secure as its weakest link. East Asian countries need to understand the linkages between cybersecurity and economic growth to design a national strat-

egy that can address both IT and economic security. Additionally, as the region's economy becomes increasingly integrated, nations need to agree upon a set of cybersecurity norms and standards to facilitate economic transactions between states.

The linkages of cybersecurity

Most nations in the Asia-Pacific are cognizant of the cyber insecurity issue. Countries such as Japan have been promoting better cybersecurity practices domestically as well as regionally. Despite the effort, countries across Asia still suffer from frequent cyberattacks. Asia-Pacific countries that are the most technologically-advanced are the most vulnerable to cyberattacks. According to a report released by Deloitte Touche Tohmatsu Limited, the 'Cyber Five' nations – South Korea, Australia, New Zealand, Japan, and Singapore – appear nine times more susceptible to cyberattacks than other Asian countries.² The report also noted that the five nations are the most reliant on Internet-based interactions. Technology as a driver of economic growth is also creating new kinds of vulnerability to cyberattack, which in turn is disrupting nations' economic security.

Cyber insecurity is not only affecting advanced economies in the Asia-Pacific, but it is also

becoming a salient issue among developing economies in the region. Developing countries are seeing an exponential increase in Internet users primarily via mobile phone subscription. Despite the growth of users, national cybersecurity capacities have remained rather stagnant. In a region that is rapidly embracing IT, nations like the Philippines, Vietnam, and Indonesia are becoming increasingly vulnerable to cyberattacks. Lyon Poh, a cybersecurity partner at KPMG Singapore, said that "Southeast Asia still has weak governance in handling sensitive information, thus being a target of cyberattacks...Delaying cybersecurity measures could cost businesses to lose \$3 trillion globally by 2020."³

At a macro level, integrated regional economies such as the Association of Southeast Asian Nations (ASEAN) requires a consolidated cybersecurity to facilitate secure financial and information transaction between its members. However, while wealthier nations have invested more in cybersecurity infrastructures, lesser-developed countries are lagging behind. According to a report by Gartner, IT spending in Southeast Asia will total \$62 billion. However, 80% of the expenditure is coming from Singapore, Malaysia, Indonesia, and Thailand.⁴ By targeting the weaker countries as an attack vector, hackers can easily disrupt re-

gional supply chains and financial networks.

Outside of ASEAN, neighboring nations such as Japan and China also benefit from robust regional cybersecurity since these countries have made major investments and trade agreements with other Asia-Pacific nations. A cyberattack that disrupts Singapore can affect the return on investment for both China and Japan. Therefore, as intraregional trade and investment increases, domestic and regional cybersecurity capacity must grow at the same rate.

Promoting better cybersecurity for economic security

At the domestic level, Asia-Pacific countries need to reinforce their cybersecurity capacity by targeting cyber vulnerabilities at all levels: from private citizens to the corporations as well as the government. Complacency and the lack of fundamental understanding of cybersecurity "hygiene" at the citizen level can lead to gaping vulnerabilities which hackers can use as entry-points. Countries can address this issue by promoting awareness such as the importance of using stronger passwords and how internet scams and phishing are conducted. National governments must also do more to support technological development and provide best practices and guidance to corporate

cybersecurity. Finally, national governments must also reinforce their country's critical infrastructure cybersecurity capabilities to prevent and recover from potential cyberattacks.


Countries should refrain from investing in cyber offensive capabilities. Offensive-oriented investments do not equate to better cyber defensive capability. The purchase of black market malware and vulnerabilities for the use of building up a "cyber arsenal" does little for a nation's infrastructure cybersecurity and creates no value to the economy. Such purchases often have relatively short lifespans and can only be used once. Furthermore, offense-investments can create strategic mistrust among neighboring nations which detract from regional relations and economic growth. Instead, investing in defensive capabilities such as information security education or supporting the growth of a domestic IT industry will have longer lasting effects. By investing in defensive cybersecurity training and infrastructure, a nation's economy will, in turn, become more resilient against cyberattacks. Additionally, IT education and investment can lead to long-term

economic growth through innovation and productivity.

At the regional level, nations need to enact norms to mitigate state-sponsored cyberattacks and promote regional digital-economy security and cooperation. ASEAN countries and other East Asian states should establish norms to prevent future cyber conflicts, including cyberespionage incidents. Just as China and the United States have agreed that neither government "will conduct nor knowingly support cyber-enabled theft of intellectual property," this agreement must be further reinforced between Asia-Pacific nations.⁵ By the same token, Asia-Pacific nations must clarify their positions on their offensive and defensive cyber strategies to provide clear signaling and prevent strategic mistrusts.

The private sector can also contribute towards building regional cybersecurity growth. Drawing from its experience in the United States and involvement with the Federal Communications Commission advisory groups, Japanese telecommunication company Nippon Telegraph and Telephone (NTT) is currently spearheading efforts

to promote standards and information sharing across Asia. For NTT, promoting regional cybersecurity resiliency is also a major business opportunity. Such efforts have generated about 85 % of the company's revenues in Japan and allowed for better growth prospects in Asia.⁶

In sum, the current trajectory towards further economic integration and the lack of cybersecurity is a cause for concern for both state and regional economic security. The disparate levels of IT resiliency among the nations have contributed towards the weaknesses in the cybersecurity chain. As nations in the Asia-Pacific become increasingly dependent on IT economically, delaying much-needed investments in cybersecurity will result in the deterioration of economic security. By establishing norms, clarifying cyber strategies, and promoting regional sharing of information and resources, Asia-Pacific countries will benefit economically. Rather than deferring and detracting from the issue, Asia-Pacific countries have a real opportunity to become global leaders in cybersecurity development. 

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TROUBLED WATERS

Resource Scarcity along the Mekong River

by Rachel Hulvey

In China, hydropower dams are a symbol of might and engineering prowess. Mao Zedong insisted “man must conquer nature” and placed heavy emphasis on the construction of water projects to display strength and technical ingenuity (Chellaney, 2011). However, often in politics as in physics, for every action, there is an equal and opposite reaction. Along the Mekong River, Chinese hydropower dams increase domestic water security at the expense of Southeast Asian neighbors. The dams impound water in China and constrain the transnational flow of water, reducing the ability of impacted governments to supply water for consumption and industry. A growing number of scholars predict future “water wars” between China and riparian states over access, control and sovereignty of scarce water resources (Mearsheimer, 2001). This research examines the realist prediction of imminent clashes by looking at potential flash points. The research question pursued in this article is as follows: in what instances do tensions over water lead to conflict? Conflict is defined as damaging diplomatic or financial reprisal against China¹.

The scope of the paper is limited to the Mekong River, a major artery originating in China and flowing through five other states before emptying into the South China Sea. Cases from two of the riparian states, Vietnam and Thailand, were selected and evidence about these cases is drawn from both regional news sources and environmental science research. Psychology literature is used to supplement understanding of interstate relations and motivations leading to cooperation or conflict during growing resource

scarcity. An examination of riparian relations reveals that conflict arises due to the perceptions of statesmen and feelings of discontent. As a response, China often employs economic linkage strategies to mitigate conflict.

Tensions over water arise from zero sum motivations. Realism states that international affairs is a struggle for power among self-interested states. Each state is primarily concerned with security and seeks to achieve relative rather than absolute gains. Regarding water-relations, China often acts in terms of self-interest, practicing consequentialist morality, where the basis for action is examined through the lens of costs and benefits, rather than morality and fairness. As natural domestic aquifers rapidly deplete, China seeks to secure water resources for a growing population by building dams. Nationally, the dams impound close to 20% of yearly water supply and Beijing is investing over \$635 billion in water infrastructure in the next decade to increase water assurance (Chellaney, 2013, p. 234). Tensions occur because of a classic dilemma between states: the actions China takes to increase domestic water supplies reduce the security of downstream nations.

Relative deprivation theory from the field of psychology explains how tensions over water lead to conflict. Relative deprivation arises from comparisons of domestic circumstances to those of a comparative reference group. Discontent arises when an actor feels deprived of something to which the actor believes to be entitled, experiencing a discrepancy between the 'ought' and the 'is'. In essence, discontent is

not from inequality per se, but the enlarged gap between expected and achieved welfare (Majeed, 1979, p. 148). Relative deprivation deals closely with emotions and how actors both perceive and assimilate data to beliefs (Mercer, 2010). Emotion influences cognition and can explain outcomes.

Relative deprivation responses arise from the construction of hydropower dams creating tension and straining riparian relations (Homer-Dixon, 1991). Relative deprivation critically depends on perceptions and a subjective evaluation of fairness. An actor wishes to obtain adequate levels of water and energy for domestic consumption and industry and feels rightfully entitled to this water access. However, dams and irrigation systems influence perceptions and reshape expectations. The downstream riparian countries observe the relatively increasing capabilities of the upstream neighbor. Simultaneously, the downstream nation also faces adverse effects from the dams, primarily reduced flows, but also damaging externalities to fishing and agriculture industries. Feelings of discontent create motivations for action and explain how changes in natural resource allocations could lead to conflict.

Relative deprivation due to water scarcity is exemplified through diplomatic tensions in Sino-Thai relations. Construction of the Manwan and Dachaoshan in China reduced the annual downstream flow and led to the lowest recorded water levels in fifty years (Chellaney, 2011, p. 265). The Government of Thailand observed the upstream dams and experienced discontent over the diminished water sup-

plies. Evidence of this emotion is revealed in the outcome: Thai leaders selected “naming and shaming” tactics that leverage normative notions of fairness and equity to challenge China’s actions.² Thailand was particularly vocal, calling for Cambodia, Laos and Vietnam to apply bilateral diplomatic pressure on Beijing through their respective foreign ministries. A summit meeting was held between downstream states to generate international attention and to signal discord and dissatisfaction with Chinese water policies. The summit framed China as a recalcitrant, impetuous actor that restricted the flow in a “covetous and less than neighborly” manner (Gunn & McCartan, 2008). The discursive strategy initiated by Thailand was an attempt to negatively impact the cooperative image China seeks to project in the region.

Tensions over scarce resources also manifest in Sino-Vietnamese conflict due to diminishing water quality and has led to civil protests and displays of discontent. Large hydropower dams affect fluvial and aquatic ecosystems by altering natural levels of salinization and sedimentation in the water (Chellaney, 2013, p. 92). The increasing water salinity level adversely affects rice production, a major economic industry in Vietnam. A compounding factor is Chinese construction of bauxite mines, which contaminate and further degrade Vietnamese water supplies. The negative impact has led to growing focus and attention on water quality and environmental protection, with discontent displayed through populist expressions. Feelings of discontent led leaders to leverage risk strategies. Leveraging a tactic employed by China, the Communist govern-

ment of Vietnam allowed protests over water quality to take place as a costly signal of dissatisfaction. Protests under an authoritarian regime have been shown to have bargaining advantages. By posing a risk to regime stability, analogous to Schelling’s (1966) “threat that leaves something to chance”, the protests demonstrate intent and have a coercive quality (Weiss, 2014).

China responds to the discontent of states in the Mekong basin through the use of economic strategies. Proponents of interdependence claim that trade facilitates cooperation among states by shifting the attention of governments from relative gains to absolute gains. China practices “good neighbor diplomacy” and seeks cooperative relations with Southeast Asian states³ (Nathan & Scobell, 2012, p. 140). Chinese foreign policy strategy focuses on investment and trade within the region to promote gains generated from mutually beneficial economic exchange. Motivations are linked to economic interests and shifted away from water disputes through a large volume of trade, foreign direct investment, and aid to riparian nations. After the launch of larger dams, Chinese trade with Southeast Asian countries soared, increasing by 37.5% in 2010 (Shambaugh, 2013, p. 159).

This view has validity at face value, as economic strategies have successfully constrained relative deprivation from escalating to violent conflict by shifting attention from water deficits to financial gains. However, proponents of interdependence ignore the coercive aspect of China’s strategy. The diminished flow of water produced discord


within downstream nations and the cooperation resulted due to strong power asymmetries. China defined the terms of cooperation, reflecting behavior in accordance with the notion that the “strong do what they can and the weak suffer what they must.”⁴ Cooperation reflects power distributions rather than harmony (Krasner, 1991, p. 340). Beijing strategically interacts with each state individually to avoid the development of strong regional institutions that could constrain or negatively impact negotiations. Power created a bargaining advantage that allowed China to use economic incentives to mitigate relative deprivation.

Economic tactics are supported by efforts to create uncertainty. The downstream governments lack access to water data and usage statistics, which would help to more definitively inculcate China for causing the shortage. Information regarding water levels, sediment load, composition and even rainfall is treated as a state secret (Economy, 2014, p. 159). The Chinese government attempts to cast doubt on the suspicions of downstream nations and withholds evidence so it can frame the problem as a natural disaster. To support this narrative, Beijing released impounded water and promoted the supply expansion

as emergency assistance. Foreign Ministry spokesman Lu Kang said China decided to “overcome its own difficulties” to provide water downstream (Bianji, 2016). The water release was a strategy to indicate China was equally experiencing hardship and link any negative outcomes to natural rather than manufactured causes. Withholding water data provides negotiation advantages as the downstream nations lack robust evidence to use as leverage and leads to collective action problems where states fail to jointly mobilize.

Countries with bargaining leverage resist collaboration, which supports the claim that cooperation occurs due to power dynamics rather than harmony of interests. In Myanmar, China planned to construct the Myitsone Dam along the Irawaddy River to import energy for use in China’s Yunnan Province. To construct the dam, thousands of people in Myanmar would need to be displaced from their homes and scientists predicted adverse flooding and substantial loss in migratory fish species. Officials elected to suspend rather than cancel the project, tying up the Chinese \$3.6 billion investment (Kim, 2015). The operation of relative deprivation caused officials to selectively focus on environmental concerns and deviate from

economically rational behavior. Myanmar was able to clash with China due to considerable geopolitical bargaining leverage as nearly 80 per cent of Chinese oil imports pass through the Malacca Strait. Control of strategic geography provided Myanmar a bargaining chip to challenge China’s water policies. In this instance, economic linkages could not overcome relative deprivation.

China controls the Tibetan plateau, where most of the rivers in Asia originate including the Ili and Irtysh that flows into Kazakhstan and the Brahmaputra River shared by China, India and Bangladesh (Economy, 2014). In the Mekong Basin, comparative declines in water and energy supplies have created relative deprivation. Although the region faces discord over water, cooperation was ultimately achieved through economic factors. Economic linkages are relatively successful at creating regional stability, but it is unclear at what point deprivation becomes intolerable and necessitates physical conflict. This study recommends further empirical analysis of water tensions in the region to study the nuances of relative deprivation and perceptions of natural resource allocation. 

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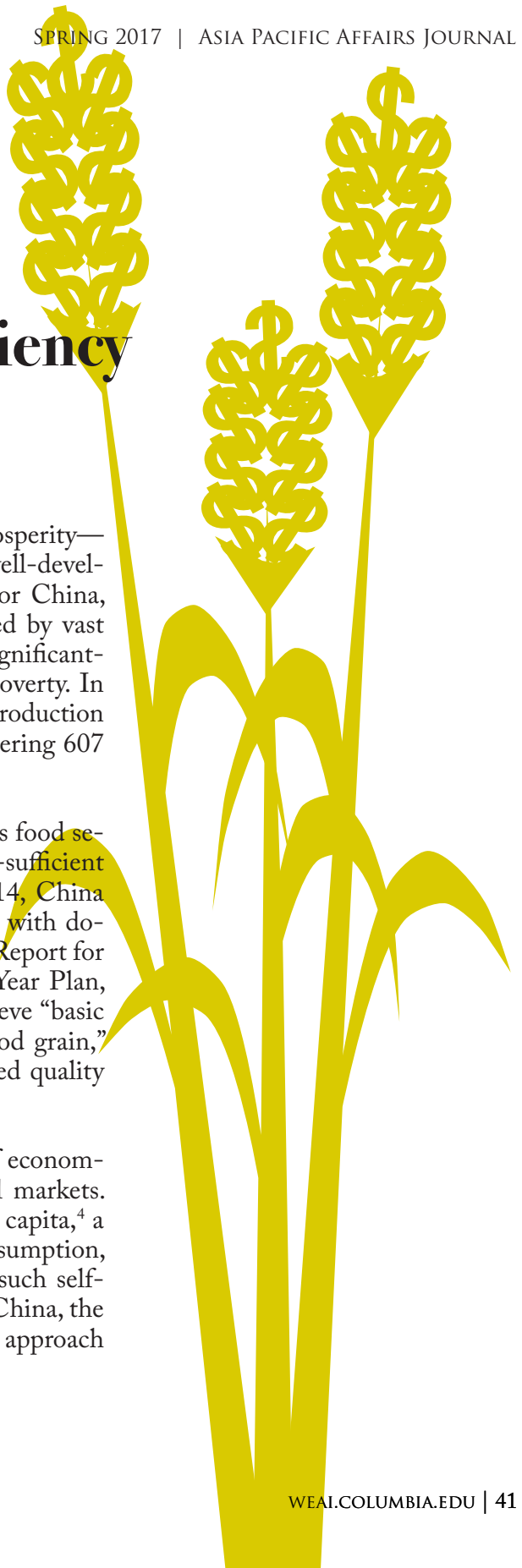
Reconciling Economic Security and Agricultural Self-Sufficiency

by Xinyi Gu

Food security is inextricably tied to economic prosperity—a well-fed population is one of the signs of a well-developed economy and high standard of living. For China, rapid growth in agricultural production, accompanied by vast improvements in access to food in rural areas, has significantly reduced malnutrition and lifted millions out of poverty. In 2014, for the eleventh year in a row, China's food production increased, causing overall production to reach a staggering 607 million tones.¹

Such growth figures strengthen the outlook of China's food security. At the same time, China has been largely self-sufficient with its production of rice, corn and wheat. In 2014, China satisfied 98% of its demand for rice, corn and wheat with domestic production.² The China Agricultural Outlook Report for 2016-2025, published at the onset of the 13th Five Year Plan, indicates strong confidence in China's ability to achieve "basic self-sufficiency of cereals and absolute security of food grain," especially given slow population growth and improved quality and efficiency in agricultural development.³

Agricultural self-sufficiency is an important aspect of economic security as it allows less reliance on international markets. However, with only 0.077 hectares of arable land per capita,⁴ a rapidly urbanizing population and growing food consumption, it seems almost unimaginable for China to achieve such self-sufficiency. As consumption continues to increase in China, the Chinese government finds it necessary to take a new approach to "self sufficiency."



Urbanization, increasing consumption, and challenges for food security

Land reform, technological improvements and expansion of irrigation has led to the rapid increase of agricultural output that contributed to vast improvements in food security and reduction in poverty. At the same time, rapid urbanization and an improving standard of living have contributed to an increase in labor costs, land use, as well as consumption of meats, fruits, and other non-staple foods.

The purpose of the Chinese government's agricultural self-sufficiency policy is to guarantee food security. Although food security requires adequate supply, it also requires such supply to be accessible to the population—it needs to be economically competitive and safe. During the China Development Forum of 2015, Han Jun, Vice President of China's Central Rural Work Leading Group (*Zhongyang Nongcun Gongzuo Lingdao Xiaozu*), affirmed that China's food prices have already surpassed international food prices in almost all types of food due to rising labor and land costs.⁵ Although the Chinese government has granted numerous subsidies for agricultural products, such subsidies have caused China to reach both WTO limits on ag-

ricultural subsidies, and environmental and natural resource limits on production.

The improvement in agricultural technology, accompanied by urbanization, seems to create a paradoxical effect for China's agriculture. More water needs to be diverted to urban areas for industrial and domestic uses. At the same time, increased demand for meats require more intensive methods of agricultural production, including water use. Rapid expansion of cities has resulted in vast tracts of land being converted to urban land; a 2011 study published in the China Economic Review found significant levels of farm-city land conversion, reaching as high as 33.5% in Yingtian, Jiangxi.⁶ The loss of farmland in cities poses further challenges for food security, especially given the already low per-capita amount of arable land. More importantly, urbanization has resulted in population flows from rural to urban areas, especially among the youth. This further contributes to the loss of farmers who are needed to maintain production capacity.

Intensive agriculture is necessary for a policy of agricultural self-sufficiency, but current production has resulted in considerable environmental stress on China's agricultural lands. Nitrogen fertilizer use has increased 45-fold in the past thirty years, more than six times the world aver-

age, and China has become the world leader in both fertilizer and pesticide use.⁷ Such intensive use, and often overuse, has not only resulted in pollution, decline in land quality, and losses of cultivated land, but has also contributed to food safety concerns. Indeed, numerous severe poisoning cases caused by unsafe pesticide levels have been reported in China, and fertilizer overuse has caused algal blooms that contaminate water, leading to cases of diarrhea and liver cancer. The number of food safety incidents have increased public distrust of China's food industry, which affects China's food markets and economy.

Efforts and adaptations in agricultural self-sufficiency

Reconciling agricultural self-sufficiency and economic security requires the combination of internal regulatory efforts and external investments of which the Chinese government is well aware. In an effort to ensure a more secure food supply, China has looked towards increasing investments in countries with sufficient land to grow grain, a notable example being Ukraine. Large Chinese agricultural firms such as COFCO have negotiated investments with Ukrainian companies, such as UkrLand-Farming, in order to use their land to grow food for export to

China.⁸ China has revised its vision of “self-sufficiency,” a policy that has long been applied to grains. Wang Jimin, of the Rural and Development Institute at the Chinese Academy of Agricultural Sciences, affirms that the policy has shifted towards food grains rather than feed grains.⁹ Indeed, China has adopted new rules that will prioritize the production of meats, vegetables, and fruits; it will depend on imports of grains for feed.

One of the most important internal efforts that China is undertaking is grain storage. Although most countries have abandoned this approach, China still maintains reserves of grains, meats, and edible oils. As China considers food security a top priority, it keeps an immense stockpile of grains, the exact amount of which (kept by China as a state secret) is estimated by the Food and Agriculture Organization (FAO) to be at least 55 million tons.¹⁰ Similar agricultural reserve programs under the New Deal proved effective in the United States, which demonstrates the importance of such reserves for food safety in Chi-

na. Yet, care must be taken with grain stockpiles since excessive stockpiling remains an issue in China that has similarly led to overexploitation of land and stress on the environment.

Perhaps one of the most important efforts to ensure food security has been at promoting sustainable agriculture. Qian Xin, a farmer who returned to his hometown in Anhui after university, established a sustainable agriculture firm that aims to satisfy the urban demand for safe and healthy foods, and encourage recreational farming.¹¹ Others have encouraged more reliance on local production. Community supported agriculture (CSA), such as Shared Harvest (founded in 2011 and currently headquartered in Beijing), is established by urban intellectuals who recognize the necessity of sustainable farming and represents an important counter-trend to the rural-to-urban migration.¹²

Further promotion of sustainable agriculture not only depends on citizen efforts to establish firms and encourage ecolog-

ically-friendly practices, but also on the ability of farming schools to attract students, which is still difficult in many regions throughout China. In addition, sustainable farmers and CSA programs find it tedious to certify their practices as sustainable since they find the costs of doing so prohibitive; further streamlining the certification procedure would prove beneficial for sustainable agriculture.

Maximizing China’s food security in a sustainable and environmentally-sound way therefore requires a large degree of harmonization between government policy and citizen practices. Policy revisions at the government level and programs established by civil society have both been instrumental in promoting responsible agriculture in China. Achieving economic security in terms of food security necessitates both social and environmental considerations. Solutions need to address urbanization and rural-urban migration, as well as the environmental stress that intensive agriculture has placed on China’s limited land. ☯

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- 1 The conflict is untraditional, no military action is employed.
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