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ON KOREA

VOLUME 10

Approaching North Korea

Emerging Issues in South
Korean Foreign Relations

Understanding the South
Korean Economy

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INTRODUCTION

Among the top problems facing the new Trump administration will be how to deal with North Korea, as the president-elect himself has indicated.¹ Since 1989, four successive presidents proved unable to stop Pyongyang from developing nuclear weapons and the means to deliver them. Under Kim Jong-un since 2011, North Korea has accelerated those programs. Experts fear it may achieve the capability to attack the United States with nuclear weapons during Mr. Trump's term in office, a situation many U.S. leaders have declared "unacceptable."²

As a candidate, Mr. Trump's statements about North Korea were few and inconsistent.³ His positions were at odds with those of his predecessors from both parties, although he has since modified or retracted some. As president, Mr. Trump will need to make decisions about many urgent issues, but he should give priority to North Korea. At best, it will take President Trump months to put his North Korea team in place and flesh out his policy. In the meantime, Pyongyang may engage in dangerous provocations. Political turmoil in South Korea adds to the urgency.

Wise men groups, institutions, and individuals in the United States and throughout the world have recently published many North Korea policy studies and recommendations in anticipation of a new U.S. administration. Collective private-sector efforts tend to paper over differences among members, resulting in recommendations that are vague or internally inconsistent.⁴ Those by institutions and individuals may reflect idiosyncratic understandings of the problem, and the way they valorize U.S. interests may differ from most Americans.⁵

This paper seeks to provide an unbiased and unvarnished assessment of the North Korea problem and realistic recommendations for a U.S. policy response, especially its diplomatic approach. The essential message is that the United States has the means to defend its interests, including those of its allies, if it adopts a policy based on a clear-eyed understanding of North Korean aims and summons the political will to implement it.

This study begins with a review of U.S. interests on the Korean Peninsula and the basic policy Washington has pursued since the Korean War. It then briefly assesses the current situation before focusing in detail on the critically important question of Pyongyang's strategic aims. It concludes with a discussion of policy elements and tools and some recommendations for the Trump administration.

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of diplomatic relations; sanctions easing; economic, energy, and humanitarian aid; and the signing of a peace treaty. The sticks are the threat of ever-increasing diplomatic, economic, and financial sanctions, and—for the worst case—keeping open the option of militarily destroying its nuclear and missile capabilities.

Tensions Among U.S. Strategic Priorities

Tension between the top two U.S. priorities of protecting South Korea while avoiding war resulted in the United States consistently dissuading South Korea from retaliating militarily against North Korean attacks. This created a moral hazard that continued until 2010, when North Korea sank a ROK naval vessel and later engaged in an artillery attack on South Korean territory. Pressed by the ROK, United States agreed that South Korea could retaliate proportionately against future North Korea military attacks, but U.S. officials remain anxious this could lead to a retaliatory cycle and possibly another war.⁷

Tension also exists between the United States' top two priorities of protecting South Korea and avoiding another war on the Korean Peninsula, on the one hand, and, on the other, of ending North Korea's nuclear program. Although American presidents have sometimes referred to a military option against North Korea's nuclear program, they never seriously contemplated it due to the risk of another war.

North Korea Policy Under the Obama Administration

In 2009, newly inaugurated President Obama told North Korea he wished to negotiate an end to the nuclear program and resolve other issues of concern to both countries.⁸ Just four months later, North Korea detonated a nuclear device that, unlike its first test in 2006, was fully successful. Nevertheless, the Obama administration soon began talks with Pyongyang that resulted in the "Leap Day deal" of 2012—U.S. food aid in exchange for a freeze on North Korean nuclear and long-range missile tests. North Korea launched a rocket into space six weeks later, sinking the deal and destroying what little hope for negotiations had remained in Washington. Especially since the imposition of UN sanctions after Pyongyang's nuclear and missile tests in 2009, the regime has repeatedly made it clear it has no intention of negotiating away its nuclear and missile capabilities.

After the Leap Day deal failure, the Obama administration held firm that it would negotiate but only if Pyongyang genuinely put its nuclear program on the table. As North Korea instead accelerated its testing of nuclear devices and missiles, the Obama administration led the international community in greatly increasing sanctions on Pyongyang. Prodded by Congress, the administration moved in 2016

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There is little reason for optimism that Kim Jong-un will, on his own, choose a better course. Initial international hopes that he might be a reformer evaporated years ago. While debate continues about the extent to which Kim has consolidated his position,¹² he has already been in power for five years. Efforts to put him under greater pressure to give up nuclear weapons have been weakened by the PRC's reluctance to support sanctions it fears might threaten his regime and risk instability along the two countries' 880-mile border. In recent years, North Korea's economy has grown slightly despite increased sanctions, and North Korean leaders appear increasingly confident they can manage the international consequences of their nuclear policy.

The U.S. position in Northeast Asia has been weakened over the past two decades by the widespread perception that the United States is declining while China is rising. The increasing strategic competitiveness of China and Russia with the United States has limited their cooperation with Washington on North Korea policy. China has come to share with North Korea the objective of ending the U.S.-ROK and U.S.-Japan alliances (although the goal is far more important and urgent for Pyongyang).¹³ Only Japan remains strongly supportive of the U.S.-ROK alliance and U.S. policy toward North Korea, but its conservative administration is on poor terms not only with the PRC but also with South Korea.

Perhaps most important, South Koreans have long been severely polarized over North Korea, and the country is currently in political turmoil over a domestic scandal involving President Park Geun-hye, a conservative and North Korea policy "hawk." Even if she is not forced to step down before her term ends in February 2018, her authority has already been greatly diminished. If a progressive replaces her, South Korea will likely adopt an updated version of the sunshine policy of appeasing North Korea, including deemphasizing the use of sanctions.

NORTH KOREA'S STRATEGIC AIMS

North Korea's nuclear threat is a product of its capabilities and intentions. Unfortunately, reliable intelligence about North Korean leadership intentions appears to remain unavailable, even to the U.S. government. Past U.S. leaders had hoped that Pyongyang's nuclear goals were limited to defensive purposes, such as military deterrence, as Pyongyang itself claims, and that it might be willing to negotiate away its nuclear programs for security assurances and aid. The failure of negotiations based on these assumptions has left unanswered whether Pyongyang was ever willing to end its nuclear programs or whether it engaged in a prolonged

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North Korea's leaders have thus consistently sought to end the U.S.-ROK alliance, but to their consternation it has only grown stronger. Now they hope that the credible threat of being able to attack the United States with nuclear weapons will finally force Washington into negotiations aimed at undermining the alliance. Pyongyang's stated demands include acceptance of North Korea as a legitimate nuclear weapons state, removal of the U.S. nuclear umbrella over the ROK and Japan, an end to U.S.-ROK military exercises, the withdrawal of U.S. forces from the South, and a (bilateral) peace treaty with the United States (on North Korea's terms).¹⁵ If *any* of these demands were accepted under the current circumstances, it would eviscerate the alliance.

To succeed, North Korean leaders feel they must make U.S. leaders believe they have the capability of attacking the United States with nuclear weapons. Thus, for some time now, they have been claiming they already have such a capability, even though most experts are doubtful. They must also convince American policymakers that even increased sanctions cannot dissuade the North but will only make it more determined.

In the meantime, however, members of the North Korean elite must suffer from profound psychological stress, because they cannot be certain their strategy will work in time and because the various risks require contradictory responses. For example, the need to intimidate the United States entails accelerating the nuclear and missile programs. But doing so results in increased international sanctions and greater efforts by the international community to propagandize the North Korea populace. In the worst case, they fear the United States might use military force to destroy North Korea's nuclear and missile programs. With North Korean leaders in such a difficult situation, it is not possible to predict with confidence what their near-term steps will likely be, for example, whether they will accelerate the nuclear and missile programs, engage in more attacks on South Korea, or revert to one of their occasional "charm offensives," perhaps directed this time at the new U.S. administration or a new South Korean government.

This theory of North Korean leadership intentions cannot be proven but it economically explains Pyongyang's behavior and has a great deal of historical evidence to support it. To those who would argue that North Korean leaders would have to be delusional to believe they might someday end the U.S.-ROK alliance, much less subvert the ROK, the author agrees they are very unlikely to achieve these aims. But North Korea's leaders see no better option, and as they have long pointed out to Americans, the United States has accustomed itself to India and Pakistan having nuclear weapons. North Koreans also rely on China's strategic mistrust of the United States to limit U.S.-PRC cooperation against them.

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long been on its last legs and that the United States should work for its collapse, as the only way to resolve the problems it presents.

The situation is more complex and fraught with risk than the advocates of either position appreciate. A regime such as Pyongyang is strong but brittle; someday it will suffer a dramatic disjuncture. Unfortunately, there is no way to estimate when that might occur, what form it might take, whether the situation would soon stabilize or result in even more instability, and whether the result would be better or worse. U.S. policy makers cannot count on change occurring before Pyongyang gains a nuclear capability against the United States homeland. Intensified U.S. pressures would somewhat increase the likelihood of change within North Korea occurring sooner, but other risks and uncertainties would remain.

Unification

Soon after President Obama's inauguration, he and ROK President Lee Myung-bak proclaimed Korea's peaceful reunification to be a major goal of the alliance.¹⁷ The United States has always supported Korea's reunification as a free and democratic state, but there has never been an occasion after President Truman's dismissal of General MacArthur in 1951 when U.S. leaders believed it might be achieved without incurring an unacceptable degree of risk to their higher priority of protecting South Korea.

Even in the best case—a peaceful collapse of the North Korean regime and initial cooperation by most North Koreans with a unification *process*—there is no guarantee that the *end state* of unification can be maintained. Moreover, the likelihood of a best-case scenario is low. Strong support from the South Korean establishment and people would be a necessary but not sufficient condition to make a success of a reunified Korea, but most South Koreans today are wary of reunification and unwilling to make sacrifices for it. If, in a reunified Korea, North Koreans came to feel that South Koreans did not respect them and were not prepared to help them, the result could be disastrous.

Sanctions

All U.S. administrations since 1950 have made sanctions a major part of their response to North Korean misbehavior. The Obama administration significantly increased sanctions as North Korea accelerated its nuclear and missile programs, and it successfully encouraged the United Nations and many states to adopt similar measures. Under conservative leadership for the past nine years, South Korea too has greatly increased sanctions against Pyongyang.

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Day deal, the Obama administration has insisted it will not negotiate with North Korea unless it demonstrates that it would engage in genuine talks about ending its nuclear weapons program. Critics, however, say the only way that the North Korea problem can be resolved peacefully is if Washington and Pyongyang engage in intensive negotiations to understand each other's interests and find a way to bridge their differences. At a minimum, they say, negotiations would serve to reduce tensions and the risk of North Korean provocations. What harm could it do, they ask rhetorically.

But it is the critics who err, in both their understanding of the situation and their policy recommendation. Since 1992, the United States has not opposed negotiation in principle with North Korea. The issue has been, not only for the United States but for North Korea as well, not *whether* to negotiate but on *what* terms. The United States is not willing to negotiate on the basis of North Korea being a legitimate nuclear weapons state, and North Korea is not currently willing to negotiate on any other basis.

If the United States negotiated unconditionally under the current circumstances, the international community would rightly regard it as evidence that the United States was moving toward acceptance of North Korea as a legitimate nuclear weapons state. The United States would lose credibility in the eyes of its allies and partners, and North Korean leaders would interpret the American move as proof their strategy was working. Even if the United States soon abandoned the negotiations, as it would likely do when confronted by North Korean intransigence, considerable damage to American interests would already have been done.

The critics are correct that it is important to understand Pyongyang as well as possible, but negotiations are not the only way of doing this. The United States government can engage in diplomatic dialogue with North Korea at the United Nations (the "New York channel") and elsewhere. American private citizens, including former senior officials, meet with North Korean diplomats. The United States engages in public messaging to North Korea and closely follows North Korea's public statements. The United States also has access to a great deal of information about North Korea from foreign sources, including those in direct contact with Pyongyang. The current problem is not that Washington and Pyongyang do not know and understand their respective policies and aims; it is that they know them *all too well*.

The Freeze Mirage

Some argue that North Korea will never give up nuclear weapons and thus the United States should accept indefinitely what they regard as the second-best

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U.S.-ROK Military Exercises and a Peace Treaty

Two of North Korea's most-repeated and longstanding demands are for an end to U.S.-South Korean military exercises and the conclusion of a peace treaty. If the United States and the ROK are to be able to deter and defend against a North Korean attack, however, they must engage in regular military exercises of their plans, personnel, and communications. Because most U.S. military personnel are assigned to South Korea for only one year, exercises must be held annually to familiarize them with the terrain, their ROK allies, and U.S.-ROK military plans. North Korea conducts its own regular large-scale military exercises but gives no indication it would be willing to reduce, much less end them. A suspension or reduction of U.S. exercises would also be interpreted by Koreans north and south as an indication of American naiveté and lack of fortitude. It would weaken the alliance and only reinforce the North Koreans in their current course.

Pyongyang's call for a peace treaty is not intended to achieve an effective and sustainable peace mechanism to replace the Armistice Agreement but to facilitate a negotiations process aimed at ending the alliance. If Pyongyang were interested in a genuine peace treaty, it had an ideal opportunity to achieve one during the Four Party Talks from 1996 to 1998. Initiated by the ROK's Kim Young Sam and the Bill Clinton administrations, along with the PRC, precisely to establish a peace regime, these intensive negotiations achieved absolutely nothing. The consistent North Korean position was that all that was needed was for the United States to sign an otherwise blank sheet of paper entitled "Peace Treaty between the Democratic People's Republic of Korea and the United States of America." All entreaties to the North Korean diplomats to discuss tension-reduction and confidence-building measures to give substance to a peace treaty were ignored.

Human Rights and Humanitarian Aid

Since the end of the Cold War and even more so since the advent of the World Wide Web, the international community's focus on North Korea's abhorrent treatment of its own people has increased dramatically. No longer regarded as simply a subset of the free world's confrontation with the communist "bloc," North Korea stood out like a sore thumb in a democratizing world in the 1990s. The Internet and, later, smartphones, made it possible not only to develop a great deal of information about North Korea, but also to store, share, analyze, and act upon it. Under conservative governments for the past nine years, South Korea has played a leading role in this effort, but nongovernmental organizations focused on the problem have emerged all over the world and are cooperating closely.

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negotiate a freeze until it has a reasonable expectation that Pyongyang is prepared to engage in genuine denuclearization negotiations. If the United States adheres to this approach, its position with its allies and partners should be sustainable for the foreseeable future.

To end North Korea's nuclear threat peacefully, the United States must go further and lead North Korea's leaders to conclude that their strategy will not work. They must come to believe that the United States will ensure that North Korea will lose far more than it will gain by pursuing weapons of mass destruction. This will require a careful analysis of the domestic and international imperatives as seen by Kim Jong-un and other leaders of the regime, and the shaping of American pressures and inducements accordingly. The United States should not *gratuitously* seek to frighten or anger North Korea's leaders. The question the administration should always ask about U.S. policy measures is: will they serve to move the North Korean leadership in the direction we desire?

The optimal balance of pressures and inducements will increase the likelihood of a strategic recalculation by Pyongyang's current leaders or the emergence of a new leadership configuration more favorable to American interests. It will also maximize international support for the U.S. position. The United States should thus underline its desire for genuine negotiations that will not only denuclearize North Korea but will also address the regime's *legitimate* concerns and needs. The United States should consider being more specific about incentives for denuclearization, but only where possible to do so without encouraging Pyongyang to think that it can get even more, and need to give even less in return, by waiting longer or engaging in more provocations. A peace treaty should be negotiated only in the context of denuclearization talks, not before.

Washington should remain in periodic working-level communication with Pyongyang but not engage in formal negotiations under the current circumstances. Washington should inform Pyongyang that, as far as it is concerned, the New York channel always remains available to exchange information and views. The United States should also be receptive to holding official meetings occasionally in third countries to maintain communications and ascertain if there has been any change in Pyongyang's positions. American delegates must enjoy the full confidence of the president and always be authorized to engage in limited informal exploratory discussions if it seems to them that there might be movement on Pyongyang's part.

The human rights situation must continue to be pursued but care should be taken not to burn all bridges to the regime. To the extent consistent with the overall policy outlined here, the United States should do its best to avoid inflicting additional suffering on ordinary North Koreans. In any case, it should not resume humanitarian aid to North Korea under the current circumstances.

- To obtain greater cooperation from Beijing on the North Korea problem, however, President Trump should reconsider some of his statements about PRC policy, including his call for high tariffs on PRC imports.
- Mr. Trump's strong support of human rights in places such as Cuba suggests he may give priority to the situation in North Korea as well. In doing so, he should keep in mind the possible trade-offs between targeting top leaders in Pyongyang on the human rights issue and their potential cooperation on the nuclear issue.
- With the Republican Party in control of both houses of Congress, President Trump can and should obtain the budget and manpower allocation to give top priority to the North Korea problem.

For North Korea's leaders, dealing with the United States is potentially a life-and-death matter and thus a top priority. They take it very seriously and are a much more formidable adversary than many imagine. The time has come for the United States to be equally as serious about Pyongyang. With a well-founded strategy and the political will to implement it, the United States can defend its interests and achieve its goals on the Korean Peninsula.

ENDNOTES

- ¹ President-elect Trump said of his November 10 meeting with President Obama: "... what I wanted to focus on [in the meeting] was—the Middle East, North Korea...." "President-elect Trump speaks to a divided country on 60 Minutes," November 13, 2016 (date of airing), <http://www.cbsnews.com/news/60-minutes-donald-trump-family-melania-ivanka-lesley-stahl/>.
- ² In a recent example, former chairman of the joint chiefs of staff Mike Mullen said that "...if Beijing doesn't lead this [denuclearization effort], we're going to get to a point where he's [Kim Jong-un] going to be able to put a nuclear weapon on top of a [sic] intercontinental ballistic missile that could hit the United States, and that's *unacceptable* [italics added]." ABC TV, "This Week with George Stephanopoulos," broadcast November 27, 2016, <http://abcnews.go.com/Politics/joint-chiefs-leader-encouraged-trumps-cabinet-picks/story?id=43804170>.
- ³ Thomas Lee, "U.S. Presidential Candidates Comments on the Korean Peninsula," Korea Economic Institute, <http://keia.org/us-presidential-candidates-comments-korean-peninsula>.
- ⁴ One of the most prominent among recent wise men reports on North Korea policy is Mike Mullen and Sam Nunn, "A Sharper Choice on North Korea: Engaging China for a Stable Northeast Asia," Council on Foreign Relations, Independent Task Force Report No. 74, New York, September 2016, <http://www.cfr.org/north-korea/sharper-choice-north-korea/p38259>. Seven of the seventeen members wrote dissents.
- ⁵ Among recent individually-authored North Korea policy recommendations, perhaps the best is Evans J.R. Revere's "Dealing with a nuclear-armed North Korea: Rising danger, narrowing options, hard choices," October 4, 2016, <https://www.brookings.edu/research/dealing-with-a-nuclear-armed-north-korea/>.
- ⁶ "Memorandum of Conversation, Wednesday, February 23, 1972 - 2:00 p.m.-6:00 p.m.," http://nsarchive.gwu.edu/nsa/publications/DOC_readers/kissinger/nixzhou/13-17.htm.

- ²⁰ See especially the in-depth analyses of Joshua Stanton, including in his blog *One Free Korea*, <http://freekorea.us/sanctions/#sthash.FBVYhZkQ.dpbs>.
- ²¹ “Full text of KCNA announcement on execution of Jang,” *North Korea Tech* (blog), December 13, 2013, <http://www.northkoreatech.org/2013/12/13/full-text-of-kcna-announcement-on-execution-of-jang/>. See also Gi-Wook Shin and David Straub, “North Korea’s Strange, Bloody Mistake,” *Bulletin of the Atomic Scientists*, December 20, 2013, <http://thebulletin.org/north-korea’s-strange-bloody-mistake>.
- ²² Dr. Siegfried S. Hecker, a Stanford University professor and former director of the Los Alamos National Laboratory, is perhaps the most prolific freeze advocate. See, for example, Siegfried S. Hecker, “Lessons learned from the North Korean nuclear crises,” *Dædalus*, Winter 2010, pp. 44-56, <https://cisac.fsi.stanford.edu/sites/default/files/Hecker.pdf>. See also Steve Fyffe, “Hecker assesses North Korean hydrogen bomb claims,” *Bulletin of the Atomic Scientists*, January 7, 2016, <http://thebulletin.org/hecker-assesses-north-korean-hydrogen-bomb-claims9046>.
- ²³ David Brunnstrom, “Getting North Korea to give up nuclear bomb probably ‘lost cause’: U.S. spy chief,” Reuters, October 26, 2016, <http://www.reuters.com/article/us-northkorea-nuclear-clapper-idUSKCN12P2L7>.
- ²⁴ “‘Still valid are all proposals for preserving peace and stability on the peninsula and in Northeast Asia including the ones for ceasing our nuclear test and the conclusion of a peace treaty in return for U.S. halt to joint military exercises,’ North Korea’s official KCNA news agency cited a spokesman for the country’s foreign ministry as saying early on Saturday.” Tony Munroe et al, “North Korea says peace treaty, halt to exercises, would end nuclear tests,” Reuters, January 16, 2016, <http://www.reuters.com/article/us-northkorea-nuclear-usa-idUSKCN0UT201>.
- ²⁵ The World Food Program’s world “hunger map” may be found at <http://www.wfp.org/content/hunger-map-2015>.

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INTRODUCTION

Economic sanctions are popular policy tools in foreign affairs. The U.S. in particular has threatened or imposed sanctions against more than 100 different countries since 1945, more than any other state.¹ Policymakers initiate sanctions to deal with a wide spectrum of foreign policy issues such as nuclear proliferation, human rights violations, terrorism, and trade disputes. Despite the frequent use of sanctions, there is some consensus among scholars and policymakers that sanctions rarely attain their intended policy goals. Scholars estimate that sanctions fail 65-95 percent of the time.² Existing research on the consequences of sanctions suggest that economic coercion might even become a counterproductive tool causing major economic distress, humanitarian crises, and human rights violations in target countries.³

North Korea has been one of the main targets of international sanctions since the onset of the Korean War in 1950. Pyongyang has been subject to several rounds of sanctions in the form of trade embargoes, financial restrictions, aid cuts, and travel sanctions. The U.S.-led sanctions during the Cold War intended to destabilize the authoritarian Kim regime and maintain peace on the Korean Peninsula. The UN, the U.S., and other countries have levied additional sanctions in the post-Cold War era to stop the regime's nuclear program. Sanctions have inflicted major economic damage over the years and excluded North Korea from the global economy. The country today has very limited trade and financial ties with the rest of the world. In fact, just one country, China, accounts for about 90 percent of North Korea's foreign trade.⁴

Though Pyongyang has been under foreign economic pressure for over six decades, the sanctions have had no major impact on the regime's stability and nuclear program. It appears that regime change may not occur in the near future as the regime under the leadership of Kim Jong-un faces no major domestic opposition. Further, the defiant North Korean leadership does not seem to be deterred by the sanctions directed at its nuclear program and military capacity. To prove its resilience, the regime responded to foreign pressure by conducting more nuclear and ballistic missiles tests in recent years.

Why has economic coercion failed against North Korea? What are the possible policy implications of the failed North Korean sanctions? Can sanctions be better designed to extract concessions from authoritarian regimes such as the one in North Korea? Drawing on the literature on the survival of authoritarian regimes and economic sanctions, I posit that economic coercion against North Korea has been ineffective in part because the Kim regime evaded sanctions by pursuing two key strategies: selective rewards and repression.⁵ Pyongyang has been able to keep its relatively small coalition intact through supplying selective incentives and rewards in exchange for loyalty. The regime has also been successful in

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HOW DO SANCTIONS OPERATE IN PRACTICE?

The logic advanced by the traditional understanding of sanction effectiveness might not apply to most cases involving authoritarian regimes such as North Korea. In this section, I assert that autocratic regimes with a relatively small support base and high degree of institutionalization are likely to evade the anticipated political and economic costs of the coercion. I posit that these autocratic regimes survive foreign pressure by employing two main strategies: selective rewards and repression.

Small Ruling Coalition, Selective Rewards, and Sanction Ineffectiveness

Economic sanctions might inflict considerable damage on a targeted economy's foreign trade and financial ties. Target economies, on average, experience about a 3 percent decline of gross national product (GNP) and suffer from relatively high levels of inflation and unemployment rates during the sanction years.⁹ Yet previous research shows that the target leadership and its support coalition rarely suffer from the sanctions while average citizens disproportionately bear the burden of the coercion.¹⁰ Target regimes respond to foreign pressure by taking control of the economy or intervening in it to affect the distribution of wealth. They do so to divert the cost of sanctions to ordinary citizens and use remaining resources to offer selective rewards to their supporters to shield them from the economic hardship and thus preempt defections from their ruling circle.

Though most leaders facing sanctions might be inclined to provide positive inducements to their followers, their ability to do so could be contingent on the size of their support coalition. Leaders in democratic target regimes rely on a large support base (i.e., all voting-age citizens or a large portion of them) to retain power. Hence, they might lack enough capacity to provide rewards and incentives to satisfy a large segment of society affected by sanctions. They might therefore be more inclined to concede to foreign pressure in order to end the economic suffering of their citizens and thus avoid losing political power. Authoritarian regimes, on the other hand, are dependent on a small group of elites to stay in power.¹¹ Most dictatorial rulers depend on a cohesive, small group of elites such as party leaders, military officials, and business groups.¹² Because of the small size of the support coalition, authoritarian regimes under sanctions might be better positioned to protect their supporters through positive inducements.

North Korea is a prime example of an authoritarian regime with a relatively small and cohesive ruling coalition. The North Korean regime has been in power for over six decades under the leadership of the Kim family. It is a leader-centric regime with established bureaucratic institutions. The class system, *Songbun*, developed by the leadership determines each citizen's status in society, and access to basic needs and employment opportunities. There are three main classifications

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sanctions suggests that target leaders tend to eliminate growing dissent and opposition using various repressive means such as extrajudicial killing, torture, and political imprisonment.¹⁶

Democratic target regimes are less likely to suppress growing opposition using repression. Leaders in democracies are unlikely to pursue repressive strategies since they are constrained by institutional mechanisms such as the rule of law and checks and balances.¹⁷ Autocratic leaders, on the other hand, do not face similar institutional constraints to apply violent means. Therefore, dictators facing domestic or foreign threats might be more inclined to use torture, political imprisonment, and other forms of repressive tactics to cling to power:

The North Korean regime is considered to be among the world's most repressive regimes. The government effectively monitors, discourages, and quells opposition. The regime has no tolerance towards even the mildest criticism of the leadership. Citizens are not permitted to hold independent meetings and gatherings without the regime's approval and surveillance. There is also no independent media in North Korea. The state fully controls the media to ensure the dissemination of biased information. The regime has a system of informants to detect organized dissent. Informants are installed at factories, schools, and party offices. Every citizen is part of a neighborhood unit called *Inminban*. Each member of the neighborhood-watch system is required to monitor fellow members and report anti-regime activities to the party authorities. Those who have been suspected of political disobedience and other subversive activities often face harsh punishments such as public executions, torture, and years of imprisonment in prison camps.¹⁸

Even if the sanctions might create economic grievances and dissatisfaction with the current leadership, ordinary citizens simply lack channels to organize opposition. Its full control over the state apparatus, total surveillance of the society, and efficient institutions of repression help Pyongyang eliminate any challenges to its authority. Thus, the failure of economic coercion against North Korea is consistent with what might be expected given the domestic make-up and practices of the state.

CAN ECONOMIC SANCTIONS BE DESIGNED BETTER?

In this manuscript, I have argued that economic sanctions have been ineffective against North Korea in part because Pyongyang has been able to shield its support coalition from the economic hardship experienced by the ordinary citizenry, and has employed repression to quell any potential opposition. Can sanctions be better designed to put pressure directly on the ruling circle?

The U.S.-led sanctions during the Cold War were mostly comprehensive measures aimed at fully restricting North Korea's trade and financial transactions with

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prompt North Koreans to demand similar basic rights and freedoms from their own regime.

The failed record of the sanctions does not imply that coercive economic policies should completely be abandoned in dealing with Pyongyang. Export sanctions on dual-use technologies and other materials used for nuclear purposes could still be partially effective. The ruling elites will not dismantle the nuclear program as it is an important deterrent to external aggression and a security guarantee for the regime's survival. Though selective sanctions targeting the nuclear program will not necessarily result in a reversal of the nuclear program, they might at least impede or delay the regime's ability to develop more advanced nuclear technologies and equipment.

Targeted sanctions on luxury goods could also help put some pressure on the ruling elite if implemented effectively. There have been multiple rounds of UN sanctions on the export of luxury goods to North Korea since 2006. These selective sanctions have, so far, failed as the regime has continued to access most luxury items through illicit trade and the use of intermediaries. There is also evidence that some sanctioning countries, such as China, appear to have failed to strictly enforce the export ban on luxury goods to North Korea.¹⁹ The ban on luxury goods has also not been very effective because there is no consensus among sanctioning countries on what comprise luxury goods, as different countries have different lists of luxury goods. Hence, selective multilateral sanctions on luxury goods and other items would help pressure Pyongyang if the U.S., China, and other sanctioning countries agree on a shared list of luxury goods, create a mechanism to enforce the sanctions, and establish rules and procedures to penalize countries and private actors who breach sanctions.

Financial sanctions on foreign banks could also be used to curb the regime's ability to have access to foreign currency and disrupt its illicit financial activities. For instance, the U.S. Treasury Department's decision to blacklist a Macau-based bank, Banco Delta Asia, accused of money laundering in 2005 forced the government of Macau to freeze North Korean deposits in the bank. Though the impact of the financial sanctions was short-lived, as the regime found other ways to do business through clandestine networks and third-party actors, it still initially restricted the regime's access to hard currency and the international financial system.²⁰ Thus, financial sanctions such as the recent Treasury Department's designation of North Korea as a "primary money laundering concern"²¹ could put more direct pressure on the regime by blocking its access to the U.S. dominated global financial system. Most countries and their financial institutions would be compliant with financial sanctions in order to avoid being kept out of the U.S.-dominated financial system and tarnishing their own reputation by cooperating with countries under financial sanctions.

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INTRODUCTION

If the 21st century ultimately fulfills its predicted destiny as the “Pacific Century,” future historians may mark 2013 as the watershed year in which the gravity of world power shifted decisively towards the Asia-Pacific. In this year, the revival of the ancient “Silk Roads” suddenly reemerged to captivate the attention of policymakers around the world, and to spark the imagination of countless scholars and analysts who speculate about the emergence of a “New Great Game” over power and influence in the dynamic but uncertain region.

The sheer number of great powers and their potential ambitions in the Asia-Pacific are contributing to complex regional dynamics: among these are Russia’s “Eastern Dream,” India’s “Act East” policy, Japan’s “Free and Open Indo-Pacific Strategy,” and even the U.S. “Pivot to Asia.” Yet, perhaps the two most intriguing and notable visions for the region may be China’s “One Belt, One Road” (OBOR), and South Korea’s “Eurasia Initiative” (EAI). While the former clearly overshadows the latter—and frankly all other regional initiatives—due to the overwhelming breadth and scope of China’s ambitious plans, the relatively tiny South Korea’s aspirations may ultimately hold the key to the success or failure of China’s grand vision.

In September 2013, China’s President Xi Jinping officially initiated one of the most ambitious foreign economic strategies in modern times by any country: OBOR. If fully realized, it will fundamentally alter the economic, political, and social relationships between Eastern and Western societies. Notably, just one month later in October, South Korea’s President Park Geun-hye articulated her own vision for an East-West connection. Her call for an “Era of Eurasia” echoed the image of building a “Silk Road Express” which calls for physically linking the Western European continent with the farthest eastern end of the Asian continent, the Korean Peninsula.

Neither of these ideas is particularly original or new as they have waxed and waned over the centuries since the original Silk Road two thousand years ago allowed the flow of enormous quantities of goods, people, and ideas between the two continents. Today, as in previous eras, integration efforts are being driven largely by the multiplicity of great powers with strategic interests and equities in the Asia-Pacific. And as in the past, their ambitions and actions have profound consequences for the myriad smaller states and societies that occupy strategically valuable geography that separates the great powers. One notable difference in the present era is that South Korea for the first time in its 1,000-plus year history (previously united until 1948) as an independent state, finds itself an indisputable regional and global “middle power.”

Since 1996 when the Republic of Korea (ROK – South Korea) joined the Organization for Economic Cooperation and Development (OECD), this new and

which much has been written already, the analysis here prioritizes the political and strategic motivations for the explosion of initiatives both from within and outside the region to integrate the vast Asia-Pacific and to “connect” it with the rest of the world. Finally, this paper draws conclusions about how EAI reflects South Korea’s national and regional aspirations, and implications for the relationship and interaction between the two countries’ alternate visions for a Eurasian continent.

CHINA’S 21ST CENTURY “SILK ROAD”: OBOR

Since assuming power in March 2013, Chinese President Xi Jinping has made the construction of networks that recreate the ancient silk roads connecting the Chinese empire with the western world a pillar of modern China’s national and foreign policies. Encapsulated in the catchy phrase “One Belt and One Road,” the ambitious project is actually comprised of two separate components that are ultimately to be joined.

The first component is the Silk Road Economic Belt (SREB) which President Xi announced in September 2013 during an official visit to Kazakhstan, and refers to a network of over-land transportation corridors to be developed under Chinese direction. In the last decade, Beijing has steadily built within its own country new roads and rail links from its populated eastern seaboard to vast stretches of still largely undeveloped and less sparsely populated territories in its western and southwestern provinces.

Having connected the nation’s vast western frontiers to its more developed eastern provinces via highways, railroads, pipelines, and telecommunication networks, China now wants to extend these infrastructure connections beyond its own borders across the Eurasian landmass all the way to the Western European mainland. The path includes countries in regions situated on the original Silk Road: Central Asia, the Caucasuses, the Middle East, and Southern and Central Europe.²

The SREB, however, is far more ambitious than merely reviving the ancient silk routes because it envisions integrating other regions well beyond the historical roads. The new linkages also look northward, to connect China’s northeastern rust-belt with energy-rich Mongolia and Siberia via a modernized rail network. The SREB also looks south towards the Asian subcontinent, Southeast Asia, and even south-west towards Africa, seeking to create a cohesive economic area by creating land transportation networks, broadening trade, and increasing cultural and exchanges.

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port of Mombasa.⁵ From the east coast of Africa, MSR will then connect to the Red Sea via Djibouti, where China is building a naval base.⁶ From there, the maritime connection will continue into the eastern Mediterranean, and eventually central and southeastern Europe.⁷

Spanning some 65 countries, approximately 4.4 billion people or 60 percent of the world's population, and about 40 percent of global GDP if and when fully implemented, OBOR has the potential to make China the driving economic and diplomatic force for a development strategy and framework that will integrate the entire Eurasia.⁸

The sheer expansiveness of OBOR, however, makes the project amorphous and unwieldy, and this is exacerbated by the fact that the Chinese government has not provided a clear definition of the strategy, with no official public announcements even detailing the precise countries and regions involved. Nor are the projects themselves specified other than being reported in Chinese media coverage as involving "infrastructure investment," but they have included under a broad rubric everything from plans to install signs and information kiosks in Armenia, to the \$46 billion investment pledged to Pakistan in April 2015.⁹

While OBOR is not necessarily a "new" initiative because China has been heavily investing in overseas infrastructure construction across Eurasia for the last decade, it is nevertheless tremendously noteworthy, in great part because it is the Chinese government's first explicit articulation of a single unified vision that coordinates its pattern of promoting massive economic projects abroad. Perhaps more significantly, OBOR is a clear *political* enunciation of foreign economic strategies, and is the country's most ambitious foreign trade and investment project ever articulated.¹⁰

Furthermore, OBOR reflects a profound shift by President Xi away from China's long-standing foreign policy axiom in place since Deng Xiaoping deemed China's national interests as "keeping a low profile" in international affairs in order to focus on domestic economic modernization and stability. OBOR thus marks the start of a new era that casts aside past taboos against Chinese foreign intervention, including building overseas bases, developing clear spheres of influence, creating buffer zones, and forging alliances.¹¹

OBOR'S MOTIVES AND GOALS

While many skeptics doubt both the feasibility and highly ambitious vision of OBOR especially given the project's opacity, the Chinese government nevertheless has emphasized the strategy's primary purpose as economic in nature. Indeed, the government has been focused on increasing diplomatic coordination to standardize and link trade facilities, create free trade zones, and promote other

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has understandably maintained a hyper-vigilant preoccupation with not only protecting its territorial integrity but being wary of the potential for instability or conflict in any neighboring state.¹⁶

Beijing's continuous support over the decades of the regime in Pyongyang—both implicit and tacit—despite immense international pressure against such policies further demonstrates China's strategic priority of supporting and protecting its neighbors no matter how unpalatable or high the costs, especially if the overarching goal is to fend off the presence of a major power such as the United States directly on its border. It is clear that North Korea serves as a useful geographic buffer between U.S. military forces which are arrayed on the DPRK's southern border.

In this sense, OBOR can be considered a prophylactic strategy to promote long-term stability in neighboring countries through economic investments to prevent China being "forced" into a military confrontation with another major power. Underlying China's preoccupation with stability both internally and in bordering countries is the CCP's most immediate concern: eliminating separatist movements that endanger the unity of the Chinese political system and its functioning as a unified state. In a country of over 1.38 billion people, increased agitation among the 11.5 million Muslim Uighurs, the largest ethnic minority, is becoming a serious domestic security concern due to their growing extreme and violent efforts to gain greater autonomy and even independence from Beijing's increasingly harsh authority and oversight.¹⁷

The possibility of any separatist movement succeeding is anathema to the Chinese leadership and is an unacceptable development because of its potential to trigger a domino effect that could lead to the collapse of the entire state system. Elections this year in Taiwan and Hong Kong have intensified the Beijing leadership's concerns about challenges to its central authority.¹⁸ Movements calling for independence may actually be more threatening to the Chinese leadership than pro-democracy movements, because they are a direct threat to President Xi's dream of building a strong nation-state. While separatist versus pro-democracy agitations may be a distinction without a difference for the much of the world, especially in the West, for the CCP pro-democracy efforts are threatening in great part because they may trigger calls for separatism or independence from ethnic minority groups.

Thus, while some analysts argue that the geostrategic aspects of OBOR are "overstated" because its primary objective is ultimately to "advance key economic goals," the argument here is that there seems to be little doubt that for Beijing, economic goals are subordinate components of broader national goals, which in turn formulate the basis for geo-political calculations.¹⁹ In essence, OBOR is a manifestation of a new "extra-territorial" project by China that seeks to shape a new informal architecture in surrounding regions which prioritizes stability—economic, political, and social—as the primary goal for nations within OBOR's orbit.

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infrastructure projects. One example is the estimated \$45 billion construction in Egypt of a new administrative and business capital on 270 square miles of remote desert land. While no public details have been released, the project is crucial for President Abdel Fattah Al Sisi who took power through a bloody military coup in 2013, and is trying to build political legitimacy and boost his troubled economy through infrastructure development.²⁵

Competition with Western, Japanese, and even South Korean interests in key regions is certainly a primary consideration in China's implementation of its OBOR strategy. As such, a third, and perhaps the most significant economic tool utilized by Beijing to support OBOR initiatives is the Asian Infrastructure Investment Bank (AIIB). Officially launched in October 2014 with China providing most of the \$100 billion initial capital, it sought to expand multilateral membership and quickly garnered applications from more than 40 governments from five continents, despite strong disapproval from the United States.²⁶ Notably, many of the countries that are included in OBOR are also members of AIIB.

China's bold creation of the AIIB has sparked intense debate about its intentions and motives. Ostensibly initiated by China to meet the needs of an admittedly enormous and much-needed infrastructure financing deficit in Asia, there can be little doubt that the AIIB serves as a mechanism to extend Chinese ambitions to increase its geopolitical influence. At least three of AIIB's initial projects will involve expanding transport arteries in Central Asia and Pakistan.²⁷ Yet the AIIB is hardly a singular financing mechanism for China's OBOR ambitions, as its operations will be expanded gradually, investing only \$1.5 to \$2 billion in infrastructure this year, with a goal of reaching \$10 billion by 2018; these amounts are an insignificant contribution to the \$900 billion projected estimate of OBOR's costs.

Thus, the real significance of the AIIB and its role in OBOR is not really its financial contributions or clout in regional development, but rather that it serves an instrumental purpose to bolster the legitimacy of China's vision of an expanding extra-territorial order. As *The Economist* recently noted, the AIIB "institutionalizes" official Chinese lending abroad which has been "generous, but contentious."²⁸ By muting Chinese financial contributions to development and infrastructure projects in the region behind the cloak of a multilateral identity, developing countries can become more readily accustomed to accept Chinese economic influence, with less domestic political and social resistance.

Indeed, AIIB is only one part of China's broader strategy of spreading its financial weight to other multilateral institutions in which it plays the lead role. Another is the New Development Bank (NDB), a development organization that replaces the original BRICS Development Bank.²⁹ China's tactic of organizing multilateral groupings, particularly in its surrounding regions to serve its broader strategic

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(TPP).³² RCEP is widely considered a partial alternative to TPP because the former includes China, India, and the ROK, not current members of TPP.³³ If fully realized, linkage of the trilateral Northeast Asia FTA with RCEP and TPP would create a “super” free trade area linking not just the European and Asian continents, but the North and South American ones as well.

According to one ROK government representative, EAI when fully integrated will create a “gigantic market accounting for more than 90 percent of the world economy...with the Korean Peninsula [as] the Gateway of Eurasia” linking it across the Pacific ocean to the Americas. It is envisioned as a combined region encompassing almost 55 million square kilometers—or 40 percent of the world’s land area—with 78 countries, and accounting for more than 70 percent of the global population.³⁴ Most importantly, the eastern-most starting point for the continental Eurasia region is the southern tip of the Korean Peninsula.

While some may be skeptical of the grandiosity of such a boastful vision, it is a fact that South Korea’s advanced port infrastructure and strength in the global shipping industry—notwithstanding the current troubles plaguing Hanjin—provides a natural gateway from the Asian continent to the Pacific, providing maritime and land access points from continental Eurasia to the Atlantic.

Moreover, geographical linkages through Central Asia are key to the fulfillment of this vision, and South Korea has had a relatively long history of economic and cultural ties with the countries of this region. While the immense popularity of the “Korean Wave” of popular culture, or *hallyu*, sweeping through the region is a relatively new phenomena that has certainly raised the profile of South Korea in Central Asia, social and economic ties are deeper.

For example, Uzbekistan is astonishingly home to the fourth largest Korean diaspora population globally (after China, the United States, and Japan), numbering more than 176,000.³⁵ And remittances to Uzbekistan from the 17,000 ethnic Koreans or *Koryo Saram* who moved to South Korea to work are estimated to exceed \$100 million annually. Uzbekistan has now replaced Kazakhstan as South Korea’s primary trade partner in Central Asia, with \$1.9 billion in trade in 2015. In addition, South Korea’s investments in that country, including the Surgil gas field, the joint construction of a major Uzbek gas processing plant, and development of a natural gas development project in the Bukhara region, are estimated to be worth a combined \$12 billion.³⁶

The growing importance of Uzbekistan as South Korea’s strongest economic partner in the region is a strong indication that EAI’s broader goals are to seek benefits beyond merely short-term economic gains. Indeed, the success of EAI’s implementation is implicitly based on the shared understanding among participants that broader strategic considerations can be achieved.

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The significance of South Korea's confidence that it can play a bridging role between large and small powers, as well as between the developed and developing economies as a rationale and goal for EAI should not be underestimated. This is based on one of the motivating principles of the preceding NAI, in which President Lee asserted that the ROK can play a central role in representing the interests of Asian nations in the global arena in a more plausible fashion than China or Japan, whose occasional over-bearing attitudes have often tainted political goodwill in the region.

Indeed, as a small power that often fell victim to the exigencies of great power competition, Korea's historical experiences carry great resonance with many countries not just in Central Asia but also in Southeast Asia, who have similarly been dominated culturally, politically, economically, and even militarily at some time by Chinese and Japanese empires. Recent Chinese displays of military muscularity in the region, especially in maritime arenas, has only heightened concern about Chinese intimidation among the smaller countries of Southeast Asia. Exacerbating their insecurity is the growing uncertainty about the future of U.S. commitments in Asia in part due to the lack-luster success of the "Asia Pivot" — including increasingly negative rhetoric regarding the TPP, the designated "core" of the Pivot—and the forthcoming change in leadership in Washington. South Korea is therefore, uniquely positioned to be the "honest broker" in furthering the interests of smaller powers in the region.

Thus, EAI's broader ambitions exceed the more narrow interests of obtaining economic gains—for the ROK and participating countries—through merely broadening intra- and inter-regional trade, or even the longer-term benefits of reducing energy insecurities by expanding and connecting natural resource networks in Eurasia. In effect, the ultimate strategic vision of EAI is of achieving a "win-win" outcome for all that creates not just "one continent" but a "continent of peace," according to President Park.⁴³

THE "PIVOT" OF EAI: NORTH KOREA

While EAI's primary objective is clearly to promote closer cooperation within the region also envisaged in China's expansive OBOR, perhaps its most crucial component, is the underlying intention to permanently alter dynamics on the Korean Peninsula. While the economic scope of EAI is miniscule compared to OBOR—predictably so, given China's vast relative economic resources—in one sense President Park's vision is even more grandiose than China's ambitious scheme, due to the ROK's unambiguous prioritization of EAI's *political* goal: to fundamentally alter the geopolitical and security landscape of Northeast Asia.

President Park declared that this is to be accomplished by the "establishment of peace on the Korean Peninsula," thereby unleashing the physical flow of economic,

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transport, for which the ROK's immense trading volume is almost entirely dependent. Furthermore, the potential reduction in overland shipping costs between South Korea to Europe could eventually be reduced up to 30 percent, according to some estimates, providing a much-needed boost to South Korean exports, upon which the economy's growth is still heavily dependent.⁴⁸

Despite these potential economic gains, the primary impetus driving South Korea's EAI is not economic, but political and security motives. This was evident in the subsequent elaboration of the official title to the launch of Park's EAI speech: "One Continent, Creative Continent, Continent of Peace: Opening and Denuclearization of North Korea Through the Peaceful Prosperity of Eurasia."⁴⁹ Reinforcing the prioritization of North Korea as the paramount element of EAI's future success was President Park's corresponding launch of the "Northeast Asia Peace and Cooperation Initiative" (NAPCI) articulated during her address to the Joint Session of the U.S. Congress in May 2013.⁵⁰ NAPCI was a roadmap for implementing *Trustpolitik* beyond the Peninsula, to increase cooperation and reduce distrust at the regional level, according to Yun Byung-Se, ROK's Foreign Minister.⁵¹

Indeed, in the months and years following NAPCI's articulation, the ROK government launched a concerted effort to promote policies towards North Korea of "humanity, co-prosperity, and integration." These included the Ministry of Unification's (MOU) August 2014 announcement proposing 96 new inter-Korean projects, including support for North Korea's fishing industry, restoration of ecological systems, and normalization of the Kaesong Industrial Complex, which by 2014 had been reduced after inter-Korean tensions mounted in 2010.⁵² The MOU proposal also included plans to consider revitalization of the Kaesong-Sinuiju rail link that had been stalled for years.⁵³

Notably, neither *Trustpolitik* nor NAPCI were genuinely new concepts in South Korean approaches towards the North, despite being presented as "bold new" initiatives by the Park government. Indeed, the basic tenets of *Trustpolitik* built upon the principles of "Sunshine Policy" or engagement, initiated by President Kim Dae Jung (1998-2003). And NAPCI's principles had been earlier encoded in the September 19, 2005 Joint Statement of the "Six Party Talks," which formally established and launched one of the five Working Groups: the "Northeast Asia Peace and Security Mechanism" (NEAPSM).⁵⁴

President Park's refinement of previously established policies is a reflection of the continuity of national security priorities that has prevailed in South Korean foreign policies over the decades. EAI's true innovation, however, is the resurrection of the connection between the ROK's regional and global strategies with inter-Korean objectives; such a linkage had been severed with the end of the Cold War and the collapse of the Soviet Union in the early 1990s. At that time, the Kim Young

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CONCLUSION

In today's uncertain global environment with new threats and crises emerging with startling frequency, the Korean Peninsula unfortunately remains the focal point of a steady and compelling security problem, as it has for almost 70 years. Aside from the profoundly tragic human costs of the continued division of the Korean people, the political consequences of ongoing tensions and the potential for an outbreak of the Korean War frozen for 63 years has global ramifications, not the least because it could involve military confrontation among the world's three largest nuclear weapons powers—the United States, China, Russia—and of course now North Korea as an “illegitimate” nuclear power. Yet, a permanent resolution of the bitter division of the Korean Peninsula has perhaps equally profound consequences for the future of the entire Asia-Pacific-Eurasia region, and may even hold the key to possible integration of the Eastern and Western worlds.

China has embarked on an astonishingly ambitious path to link several continents under a new informal architecture shaped by its desire to expand extra-territorial stability. Yet, the purposefully limited view westward (and north and south) with the explicit exclusion of its easternmost neighbor, the Korean Peninsula which is economically and strategically crucial for true regional integration, is strikingly stark. It is perhaps further confirmation that for China, maintenance of the status quo—division of the Korean Peninsula—even with North Korea's ongoing pursuit of nuclear weapons programs, serves Chinese strategic goals: ensuring extra-territorial stability especially in its bordering countries.

Such entrenched Chinese interests are increasingly at odds with South Korea's own vision for the region, supported by its growing confidence as a solid middle power. Exacerbating Korean skepticism about Chinese regional ambitions has been Beijing's increasing boldness in asserting its power in the region, as evidenced by China's unilateral declaration of an Air Defense Identification Zone (ADIZ) in November 2013, which shocked many South Koreans because of its inclusion of Ieodo (or “Parangdo” by Korea), a rock that China claims as part of its territorial rights (Suyan Rock).⁵³ Thus, the ROK's “Eurasian Initiative,” despite purporting to share similar goals with OBOR of reviving the ancient Silk Roads to promote economic benefits for all involved, is far more likely to be divergent paths than a shared road.

Yet, more than the potential loss of long-term regional benefits, the divergence between the two visions for extra-regional integration signal a deeper and troubling disparity in fundamental views about regional security. China's refusal

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- port, to China Cosco Holding Company, a Chinese state-owned enterprise (SOE). Cosco already operates two container terminals in Piraeus under a 35-year concession it acquired in 2009. (Nektaria Stamoulim "Greece Signs Deal to Sell Stake in Port of Piraeus to China's Cosco," *Wall St. Journal*, April 8, 2016.)
- ⁸ Bert Hofman, "China's One Belt One Road Initiative: What We Know Thus Far," *East Asia on the Rise*, December 4, 2015; <http://blogs.worldbank.org/eastasiapacific>.
- ⁹ "The Grand Design of China's New Trade Routes," STRATFOR, June 24, 2015.
- ¹⁰ OBOR officially became embedded in formal Chinese national strategy in March 2015, when the National Development and Reform Commission, along with the Ministries of Foreign Affairs and Commerce, released an extensive joint "blueprint" for OBOR. It was further reinforced in the country's official 13th "Five-Year Plan), announced in October 2015 (Djankov, *Ibid.*)
- ¹¹ Clover and Lin.
- ¹² Jacob Stokes, "China's Road Rules: Beijing Looks West Toward Eurasian Integration," *Foreign Affairs*, April 19, 2015.
- ¹³ Sui-Wee Lee, "China's Xi: Trade Between China and Silk Road Nations to Exceed \$2.5 Trillion," *Reuters*, March 29, 2015.
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- ¹⁵ Energy demand in China has exploded by more than 500 percent since 1980, and the country is now the world's largest energy consumer, and as of 2014 a net importer of oil. Additionally, its heavy reliance on coal – approximately 40 percent of the nation's heating and electricity – has strained the environment. (Djankov, *Ibid.*) Moreover, with Beijing's recent commitment to the Paris Global Climate pact, the government must implement ambitious plans to move away from coal to cleaner imported sources of energy.
- ¹⁶ China share borders with 14 sovereign countries, more than any other country: Afghanistan; Bhutan; India; Kazakhstan; North Korea; Kyrgyzstan; Laos; Mongolia; Myanmar (Burma); Nepal; Pakistan; Russia; Tajikistan; and Vietnam.
- ¹⁷ The government officially recognizes 56 ethnic groups comprised of some 105 million people; the Han represent the largest ethnic group comprising nearly 92 percent of the population.
- ¹⁸ "Elections in Hong Kong: A Not-So-Local Difficulty," *The Economist*, September 10, 2016.
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40 *Ibid*

- ⁴¹ In October 1937, in one of the largest and most brutal mass transfers of an entire ethnic group, the Soviet Union forcibly moved its entire population (171,781) of ethnic Koreans from the Russian Far East to an unpopulated area of what was then the Kazakh Soviet Socialist Republic. Left to fend for themselves in a desolate and inhospitable environment with no supplies, these hearty Koreans foraged housing dug by hand into the hillsides and somehow managed to survive the harsh winter. These *Koryo Saram*, which today number over 107,000, are today well-integrated into Kazakh society and have earned a respected reputation as industrious and hard-working, certainly contributing greatly to modern Kazakh admiration and affinity for the Korean people and culture. (Hwang, "New Horizon in SK-Central Asia Relations," KEI, 2012)
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INTRODUCTION

In December 2014 the South Korean Foreign Minister Yun Byung-se declared 2015 as the “Year of the Middle East.”¹ A few months later President Park Geun-hye said: “The Middle East can be the answer to our prayer for economic revitalization.”² “The Second Middle East Boom” was the term subsequently coined to describe Middle East–Korea relations. The volume of trade between the Middle East and Korea, the importance of the Middle East as a vital source of oil and gas and the huge infrastructure and construction contracts in the Middle East being awarded to South Korean companies make the region a vital economic partner. Petroleum was about 39 percent and natural gas 16 percent of South Korea’s total primary energy consumption in 2014. The importance of the Middle East as an energy source for South Korea can be seen in these figures: Seoul imports more than 80 percent of its crude oil from the Middle East: Saudi Arabia 34 percent, Kuwait 16 percent, UAE 11 percent, Qatar 10 percent, Iraq 8 percent, and Iran 5 percent.³ The lifting of the sanctions on Iran after the P5+1, which will increase Iran’s oil exports to Korea, embody Seoul’s aspirations for strengthened ties in the Middle East.

The P5+1 agreement with Iran opens a window of opportunity for South Korean companies to compete for infrastructure, construction, and energy sector projects in Iran. It will allow the Republic of Korea to double its trade with the Islamic Republic of Iran, which was constrained for several years due to the sanctions imposed on Iran by the United Nations, the European Union, and the United States. Seoul was bound by the United Nations Security Council sanctions and by pressure from Washington to abide by UN and U.S. sanctions on Iran. As a result, the trade between Iran and South Korea decreased from \$10,045 million in 2013 to \$6,098 million last year.⁴ Now that this last sanctions barrier has been removed, South Korean companies are returning to Iran to do business without fear of violating any UN-imposed restrictions. The Islamic Republic of Iran is currently looking for opportunities to develop its economy after several years of sanctions which crippled their GDP growth.⁵

South Korea is not, however, the only country seeking business opportunities in Iran. In January 2016, Chinese President Xi Jinping visited Iran—the first visit by a Chinese president in ten years⁶—sending a clear message that Beijing is also looking for potential business ventures. Japan, Germany, France, Britain, and India are other important competitors, all looking for billions of dollars of contracts in the Iranian market.⁷ Once Washington eases the restrictions on U.S. companies, it is likely that they too will be in the market.

Official state visits to the Middle East by President Lee Myung-bak in 2012 and President Park Geun-hye in 2015 and 2016 demonstrated the centrality of the Middle East in general, and not just Iran, for South Korea. However, due to the

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Arabia was not willing to limit its oil production.¹² Both the disagreements between OPEC members and oil production in Iraq and, particularly, Iran will keep oil prices relatively low at \$25–45 a barrel. This will affect the state income of some of the oil-producing countries that are dependent on oil, for example, Iran and Saudi Arabia. Likewise, low oil prices will force Saudi Arabia to consider its balance of payments, thus forcing a reduction in expenditure or a search for alternative incomes; otherwise it is likely to face internal economic and political problems in the next few years.

Table 1. South Korea – Saudi Arabia Imports and Exports (in US\$ millions)

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Export	4,026	5,253	3,857	4,557	6,964	9,112	8,828	8,288	9,482
Import	21,164	33,781	19,737	26,820	36,973	39,707	37,665	36,695	19,561
Total	25,190	39,034	23,594	31,377	43,937	48,819	46,493	44,983	29,043

Source: Korea International Trade Association www.kita.org.

In the last two years Saudi Arabia and Korea have signed deals to increase their trade and cooperation including, among others, hiring South Korean engineers for the state oil refinery¹³ and expanding Korea-GCC¹⁴ trade to other sectors beyond oil, gas, and construction. Examples of this include health, tourism, information and communication technology (ICT),¹⁵ and the energy sector,¹⁶ including the selling of South Korean nuclear power plants in billions of dollars to Saudi Arabia. Another opportunity for expanding trade between Korea and Saudi Arabia is the first Saudi Arabia produced car, Ghazal 1, which was unveiled by Saudi Arabia's King Abdullah in 2010.¹⁷ A Middle Eastern high quality car designed and produced by Saudi Arabia has a potentially huge market among the GCC and beyond. The South Korean car industry could leverage its expertise to increase its involvement in the Saudi car industry, thus boosting exports while at the same time improving trade relations between Korea and Saudi Arabia. Seoul should be aware that both European and Japanese car companies are also likely to try and take their share. The new Saudi Arabia 2030 vision launched by Mohammed bin Salman also opens a new window for economic cooperation between South Korean companies and the rising Saudi Arabian private sector that is expected to play an important role.¹⁸

Iran represents another large, strategic trading partner in the region. President Park Geun-hye's visit to Iran in May 2016 with representatives from 236 South Korean companies sends a clear message that South Korea is ready to expand business ties with Iran, which were constrained during the era of sanctions.¹⁹ This was the first meeting between leaders of the two countries since 1962, emphasizing the importance of President Park's visit. As seen in Table 2, Korea's trade with Iran was doing very well prior to the imposition of sanctions. South Korea's total trade with Iran was greater, for example, than its trade with the UK or France.²⁰

Table 2
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Seoul should be aware, however, that its new partnership with Tehran might raise some questions in Riyadh.²⁶ There is a delicate diplomatic chess game going on in the region that includes not just the dyadic relations between Iran and Saudi Arabia but also the conflicts in which both states are involved, namely, Yemen and Syria. Yemen and Syria are both embroiled in civil wars in which Tehran and Riyadh, ostensibly non-players in the conflicts, are involved directly, by sending forces into the battlefield, and indirectly, by supporting the militants who fight against the government or the militant groups who fight alongside the government forces. South Korea should, therefore, be aware of the consequences of getting involved in one of these conflicts. For now, with the exception of the influx of refugees from Syria to Europe, the conflicts in Syria and Yemen have, on the whole, been contained to these two countries. Nevertheless, the conflict in Yemen could spill over to Saudi Arabia if the Houthi forces (backed by Iran) in Yemen perceive that they are losing the battle and choose to attack strategic sites in Saudi Arabia in order to convince Riyadh to withdraw its forces from Yemen. Such attacks on Saudi's oil refineries would increase the price of oil and greatly affect foreign trade. For the time being, Seoul has been able to continue its Middle East policy without being perceived to take sides in the ongoing tensions between Iran and Saudi Arabia.

Likewise, South Korea would be wise not to forget that the honeymoon currently being enjoyed between Iran and the world's nations might come to an end if Iran decides to violate the P5+1 agreement by developing a nuclear weapon. For now, however, Iran lacks any incentives to breach the agreement and risk the billions of dollars in contracts that are important to its economy.

Although Israel is located near the Middle Eastern states that were affected by the Arab Spring, it was able to minimize the aftershocks of the Arab Spring on its security and economy, but potential security threats still exist. Economic cooperation between Israel and South Korea is improving each year. Israel cannot offer South Korea oil or huge infrastructure and construction projects as the GCC states might. However, it can offer high technology that South Korean companies are looking for, R&D centers, and military cooperation. Both states have declared their intentions to negotiate a free trade agreement after years of postponement due to South Korean geopolitical reasons. The announced FTA negotiation demonstrates the importance of the economic interests to both states.²⁷ Nevertheless, one should wait and see if Korea will approve the FTA with Israel before signing FTAs with other Middle Eastern states in order to not endanger their economic relations with the rest of the region. South Korea will continue to balance its economic and political interests in a way that will allow it to continue its economic and diplomatic relations with Israel without being criticized by the Arab states for having a pro-Israeli policy.

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Year	2007	2008	2009	2010	2011	2012	2013	2014	2015
Export	386	734	1,019	1,266	1,224	1,396	1,317	1,383	849
	48	55	31	36	74	69	67	78	78
Total	434	789	1,050	1,302	1,298	1,465	1,384	1,461	927

Source: Korea International Trade Association www.kita.org

Although trade between Jordan and South Korea is relatively limited, as Table 3 demonstrates, Jordan is one of the Middle Eastern states that South Korea can assist without the need to send military forces which might inadvertently drag it into regional conflict. Seoul could help to prevent a crisis that might damage the stability of Jordan or other countries in the region, for example by increasing South Korea's official development assistance (ODA) to Jordan to help provide humanitarian assistance for the Syrian refugees. The South Korean government could, in addition, offer loans and subsidies to South Korean companies that establish research and development centers in Jordan, thus providing employment for Jordanian and Palestinian engineers. These centers will make Jordan an important R&D hub and improve its image in the region.

DESTABILIZED COUNTRIES

The destabilized states in the Middle East will pose a threat to South Korea's interests in the region if it decides to get militarily involved in these conflicts. Seoul would thus be advised to continue with its neutral policy towards these conflicts, all the while preparing a contingency plan for the day after. Once the wars in these states end, they will need to rebuild their countries, and South Korea could be there to offer both experience and financial assistance to fund the construction of new infrastructures.

Syria (along with Libya and Yemen) is an example of one of the destabilized Middle Eastern countries. As shown in Table 4, trade between South Korea and Syria is quite limited, and, due to the Syrian civil war, has decreased yet further. It should be noted that due to its diplomatic relations with Israel, South Korea does not have diplomatic relations with Syria.

The involvement of Russia and the U.S. in the Syrian war can be seen as the new "semi-Cold War" arena, and South Korea would be well advised to remain uninvolved. Russian military involvement has increased tension with the U.S. and other Middle Eastern states (Saudi Arabia, Turkey, Israel); it is perceived as Moscow's attempt to tip the balance of power in the Middle East toward a Moscow-Tehran-Damascus axis.³³ Although Moscow has withdrawn most of its forces from Syria, it continues to be active in the region. Washington, Riyadh,

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political, and geopolitical factors is imperative. The economic indicators of each state are clearly crucial when making decisions regarding investment in the Middle East; however, the conflicts in Syria and Yemen, the tension between Tehran and Riyadh, and the militant destabilizing forces in the region which might influence the outcomes of any economic benefits cannot be ignored. The Korean government would, therefore, be recommended to consult with South Korean companies about the political and security dynamics of the Middle East. These issues must be taken into account but should not prevent South Korea from boosting its gains in the Middle East for the sake of mutually improved economic relations.

ENDNOTES

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- ¹⁴ Korea and the GCC began the negotiation on signing FTA a few years ago.

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- ²⁹ Yoel Guzansky and Shlomo Brom, "King Salman's Visit to Cairo, and the Transfer of Tiran and Sanafir to Saudi Arabia," *INSS Insight* 816, April 19, 2016, accessed April 25, 2016, <http://www.inss.org.il/index.aspx?id=4538&articleid=11748>.
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- ³³ Eran Lerman, "The Russians Are Leaving Syria. Why the Surprise?," *BESA Center Perspectives Paper No. 334*, 2016.
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INTRODUCTION

Korea is faced with periodic environmental disasters in the form of pollution blowing from China.¹ In the winter, excessive burning of coal for heating has effects as far away as the U.S., shown in Figure 1, where cities like Los Angeles receive the equivalent of one extra day of pollution per year from China's production of goods for export.² In the fall and spring, western trade winds sweep up yellow dust from the deserts of northern China and Mongolia, to which soot and carcinogens from China-based industrial processes attach,^{3,4} shown in Figure 2 (<http://www.eanet.asia/product/RSAP/RSAP.pdf>). The health-related consequences are more deleterious than those produced from traditional air pollution. Indeed, the long-term health consequences of particulate matter 2.5 micrometers or less in size ($PM_{2.5}$) is particularly concerning, as $PM_{2.5}$ is so small that it can directly enter the bloodstream after being inhaled. Such dust is laden with pathogens,⁵ lead, cadmium, and arsenic,⁶ and East Asia's concentrations of $PM_{2.5}$ pollution are the highest worldwide.

Figure 1. Percentage and distribution of black carbon in 2006 from Chinese export industries

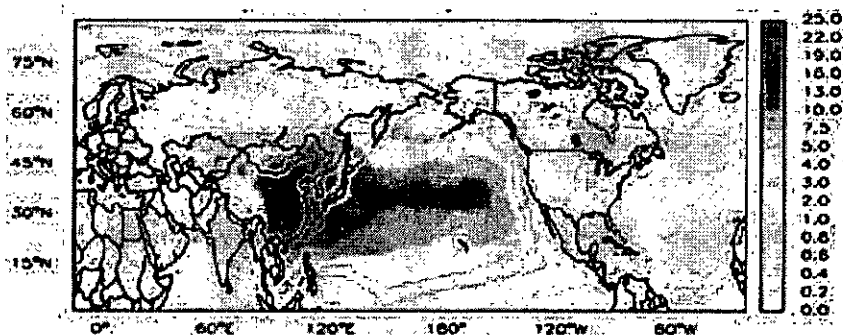
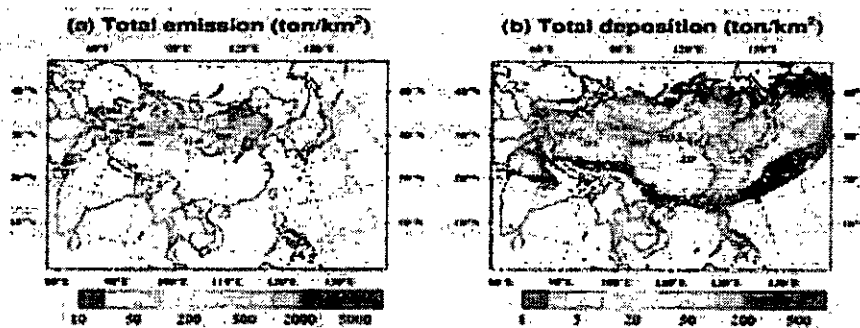


Figure 2. Spatial distributions of annual emissions and deposition of yellow dust in 2010



Source: <http://www.eanet.asia/product/RSAP/RSAP.pdf>

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Korean public opinion on the subject of transboundary air pollution from China. *Are Koreans aware of their contribution to China-based air pollution?* Differences in the discourse and imagery used by those communicating information can be deliberately employed to promote a particular interpretation of events that ultimately impact policy decisions. Second, we must consider FDI and trade data while acknowledging the role of regional environmental institutions. *How do these institutions lay a foundation for further coordination between Korea and China?* Third, we must analyze Korea's internalized health costs associated with transboundary air pollution from China. *Are these costs increasing over time, and how are they associated with FDI flows from Korea to China and with exports from China?* The mechanisms are not entirely understood between air pollution and health-related effects,²¹ but epidemiological research has identified a relationship between particulate matter concentrations and increased human mortality and morbidity.

Though the Korean media tends to lay the blame for the costs of transboundary air pollution on China, Korean firms operating in China in fact play a role in contributing to the problem. Indirectly, thus, Korea's investments in China are negatively impacting health outcomes at home and increasing health costs overall. This is an urgent problem, requiring the cooperation of both countries to manage what is ultimately a regional pollution issue.

MEDIA FRAMING AND PUBLIC OPINION

The framing of yellow dust and particulate matter by both traditional and new media provides the basis for understanding how transboundary air pollution can be interpreted by the public.²² Framing, however, is not merely a function of media reporting but also involves the public's attention to air pollution. I invoke Downs' "issue-attention cycle" to explain the overall attention received by the media and the public, which states that fluctuations in public and press attention are a function of the cycles that narratives take as issues of public concern evolve in media coverage over time. In stage one of Downs' cycle, people are unaware of the problem; in stage two, dramatic events focus people's attention on the problem; in stage three, the costs of solving the problem become clear; in stage four, there is a steady decline of public interest; and, in stage five, the issue is no longer central to the public's concern.²³

What is remarkable about particulate matter/yellow dust is the seasonal and thus periodic nature of the problem. This represents an exceptional characteristic in the context of the Downsian cycle in that news about this problem cycles with the natural blowing of the dust and other seasonal phenomena such as the excessive burning of coal in China for the heating of homes during the winter. Whether information about China in the Korean media is similarly cyclical will diminish the importance of the problem, perhaps preventing the issue from advancing to stage three of Downs' cycle.

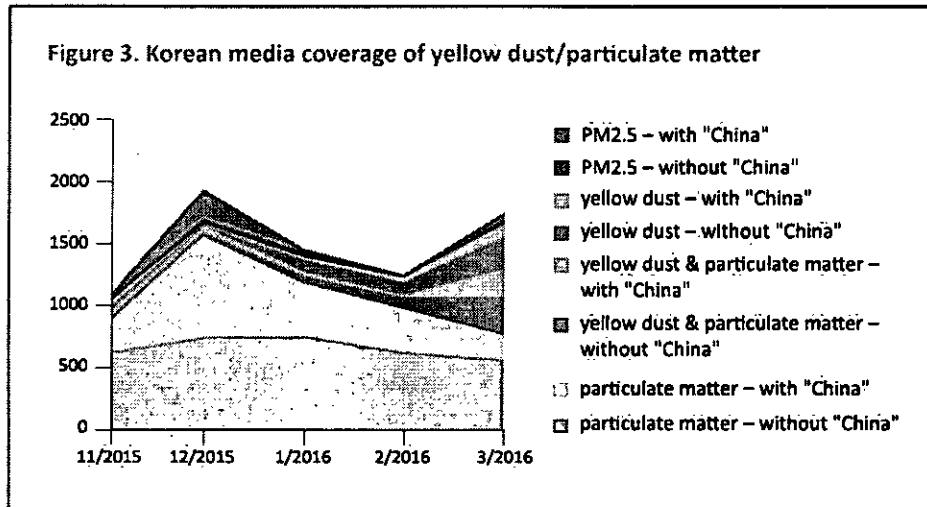
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November 2015 through March 2016 on the topics of yellow dust and particulate matter. As we can see, yellow dust is presented in the media to a significant degree only when the actual dust is blowing, specifically from February and into March (and likely increasing in April). There are no clear differences between those reports mentioning yellow dust or yellow dust/particulate matter with and without China. Media reports covering particulate matter are present throughout the news cycle, indicating that the topic is important and not yet passing into stage four of Downs' issue attention cycle. We should also note the December increase in content mentioning China in combination with particulate matter/PM_{2.5} is a likely function of China's increased use of coal for heating.



A keyword analysis of these 7,000 articles and blogs reveals a number of differences in how the media covers air pollution.³⁴ It was found that yellow dust-related media content is primarily focused on health-related information and preventative measures. These include topics such as dust masks, air purifiers, humidifiers, advisories, and respirators. This is consistent with efforts by the Korean Medical Association to understand preventative measures for pulmonary diseases through the use of masks with filters, promoting the restriction of outdoor activities, and communicating the risks of exposure to the dust to the public.^{35,36}

Media reports covering particulate matter and PM_{2.5}, however, highlight the Chinese influence. Virtually all articles on these topics were international in nature. The media thus present the yellow dust problem from an epidemiological perspective while particulate matter/PM_{2.5} is framed as a China-based problem. More importantly, there is virtually no discussion in the media about the holistic nature of the yellow dust/particulate matter problem; i.e. that FDI from Korea and Korea-China trade may exacerbate the transboundary air pollution problem. The campaign for the hearts and minds of the Korean public – if one exists – is dominated by the Korean medical and epidemiological community.

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Within China, the most readily available tool for addressing transboundary pollution is regulatory enforcement. Enforcement has been, however, a chronic problem for the severely understaffed environmental and energy ministries in China.⁴⁰ There are several notable updates. First, in early 2016, one-quarter of the 191,000 firms violating environmental regulations in 2015 were either shut down or forced to suspend operations. Environmental Minister Chen Jining stated that “many companies [are] still behaving illegally and local governments [are] still hampering enforcement efforts” of the central government.⁴¹ This represented a continuation of the Supreme People’s Procuratorate’s 18-month investigation and prosecution of more than 2,100 corrupt government officials from January 2014.⁴² As well, Minister Chen oversaw the closure of 3,400 companies, 3,700 construction sites, and 3,100 workshops in 2015. This was preceded in 2014 with the allocation of \$1.6 billion for air pollution prevention and control. Coal mining facilities were also to be shut down in order to improve the quality of coal, natural gas supplies were to be made more stable, and clean energy and energy efficient buildings were to be promoted. As a result, nitrogen oxides are expected to be reduced by 5 percent.⁴³

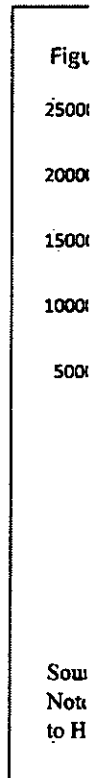
These changes in China’s regulatory landscape, if prolonged, will likely impact foreigners’ decisions to invest there. The exact effects are not necessarily clear, as stronger regulations can lead to increases in FDI,⁴⁴ or FDI can yield stronger regulations overall.⁴⁵ These results represent the challenges of establishing causality between FDI and regulations and, overall, the complex relationship between FDI and trade relations, a topic to which we now turn.

CHINA’S INWARD FDI & BILATERAL TRADE WITH KOREA

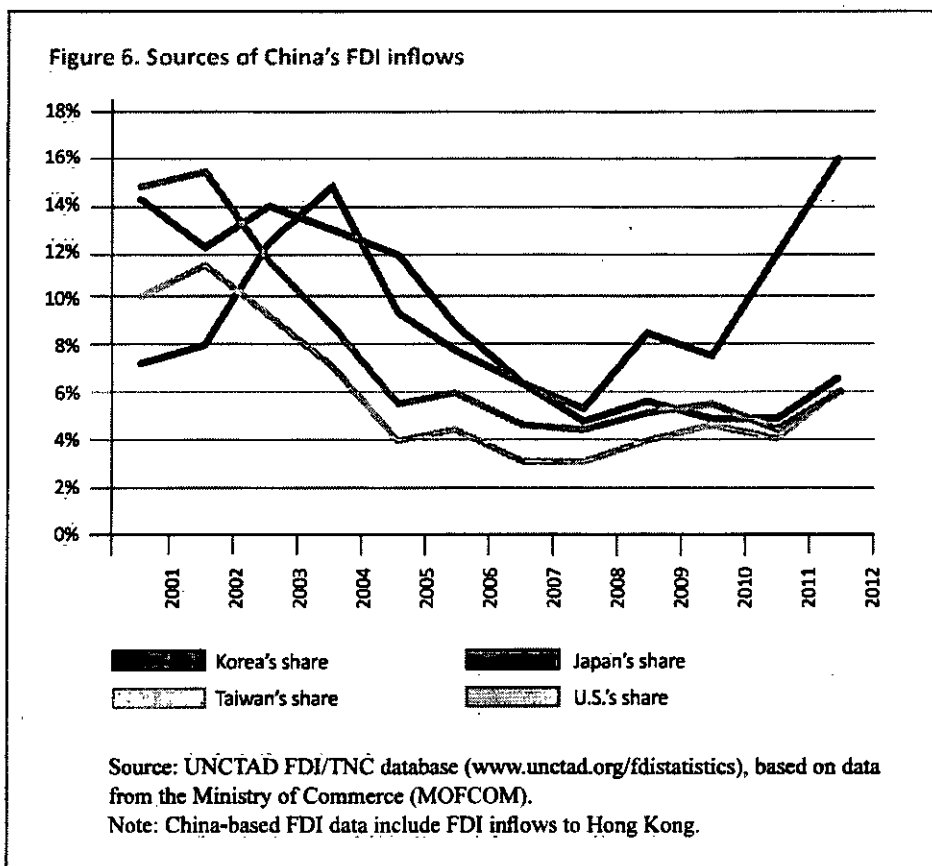
The pollution haven hypothesis can be verified in a number of ways. The crucial piece of evidence is that pollution levels increase after multinationals or other international actors invest in the purportedly environmental institution-lacking country. Connecting FDI to pollution haven activities is plagued with obstacles, but updates now confirm that such a connection is both present and clear.^{46,47} It is also worth examining the relative levels of pollutants produced in the manufacturing of goods for export, as emissions arising from foreign-invested enterprise exports are higher than those arising from Chinese-owned enterprise exports.⁴⁸ In 2006, approximately one-third of sulfur dioxide, one-quarter of nitrogen oxides, one-quarter of carbon monoxide, and exactly 17 percent of black carbon were the result of China’s export-related manufacturing. One-fifth of each of these can be attributed to exports destined for the U.S.⁴⁹ This is a story that has slowly played out in China since the 1997 economic stimulus plan stimulated the widespread use of fossil fuels.

In terms of FDI levels, shown in Figure 5, China is the single largest recipient of FDI in the world.⁵⁰ Figure 6 describes the source countries, led as of 2012 by

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COST ASSESSMENT

One can assess the economic costs of transboundary air pollution in East Asia in terms of GDP or any of GDP's constituents. For example, pathogens hitching rides on Saharan dust impact agricultural crop yields in the Caribbean and the Americas.⁵³ As well, transboundary acid rain deteriorates metal machinery and structures. Less well known but nonetheless important for the national income accounts are health effects and its attendant costs. These costs are quite high, equivalent to 80 percent of the total air pollution costs.⁵⁴ They also contribute to the creation of the compelling media frame identified earlier that, in turn, has influenced public opinion about the health effects of transboundary pollution.

The health effects associated with specific air pollutants vary according to temporal variance and pollutant type. Short-term effects of the combination of particulate matter and nitrous oxide include an increase in mortality, hospital admissions, and asthma symptoms. For particulate matter alone, there are also cardiovascular effects as well as lung inflammation; for nitrous oxide alone, there is an increase in allergic inflammation. Long-term effects for the combination of both pollutants include a reduction in lung function and an increase in respiratory

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In East Asia, we are discovering both temporal and constitutive differences between the effects of $PM_{2.5}$ and larger forms of particulate matter.⁶⁴ For example, $PM_{2.5}$ has been found to lead to more chronic diseases of the lung and heart than PM_{10} .⁶⁵ Mean annual exposure to $PM_{2.5}$ for Korea and China is presented in Figure 8, showing 25 percent growth in China from 1990 to 2013.⁶⁶ Given that fossil fuel use plays a big part in of particulate matter concentrations and that China-based nitrogen oxides are especially prone to travel across borders,^{67,68} Figure 9 presents data on China's and Korea's fossil fuel energy consumption (as a percentage of total energy consumption) and nitrous oxide emissions in the energy sector (as a percentage of total emissions). While nitrous oxide emissions as a percentage of total energy sector emissions have increased more rapidly in Korea vis-à-vis China, fossil fuel energy consumption as a percentage of total consumption has increased in China while it has decreased in Korea. Finally, in Figure 10, I present longitudinally the number of respiratory deaths in Korea and the per capita consumption of tobacco in Korea, the latter acting as a control for respiratory conditions in general. There has been a decline in tobacco use over time while the number of respiratory deaths has increased.

For purely exploratory purposes and without claiming causality, I have also conducted a correlation analysis of the aforementioned measures as well as several others. Among those correlations that are significant, the number of respiratory deaths in Korea was found to be negatively associated with FDI flows to China. Respiratory deaths were also found to be negatively associated with trade between Korea and China. Respiratory-related deaths are, however, positively associated with increases in Korea's electrical production from oil, gas, and coal. They are also positively associated with China's fossil fuel energy consumption. Korea's, not China's, nitrous oxides emissions are strongly associated with Korean respiratory-related deaths. FDI flows from Korea to China are positively associated with decreases in Korea's fossil fuel energy consumption and positively associated with China's fossil fuel energy consumption. At the same time, Korea's fossil fuel energy consumption is negatively associated with China's electrical production from oil, gas, and coal, with China's fossil fuel energy consumption, and with China's nitrous oxide emissions.

On the basis of just these associations, one could argue – and with great trepidation given modeling deficiencies – that Korea's FDI flows to China are not on their own responsible for Korea's health costs as measured by the number of respiratory-related deaths. Yet, given the positive relationship between Korea's FDI flows to China and China's increased fossil fuel energy consumption – the latter of which is positively associated with respiratory deaths in Korea – one could tentatively claim that the pollution haven-related behavior of Korean investors is connected to Koreans' overall health. We of course cannot ignore the fact that Korean respiratory deaths are also positively related to Korea's electrical production from oil, gas, and coal, but the presentation of these data establishes crucial connections among health effects, FDI flows, and transboundary air pollution.

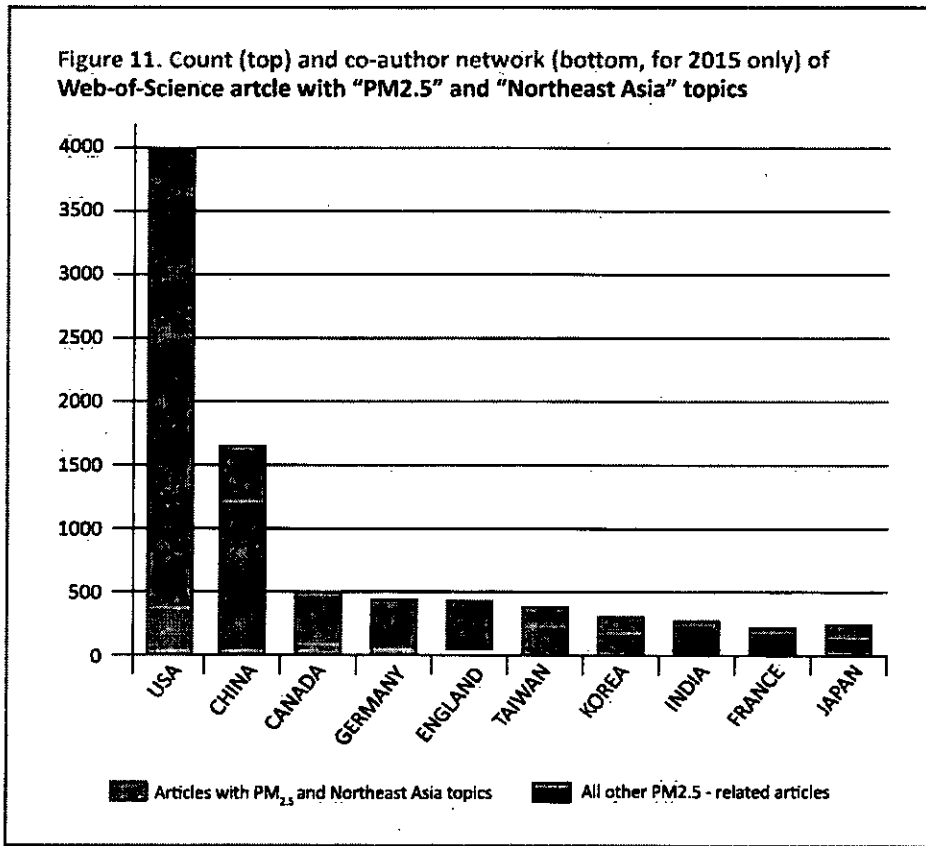
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On that front, an analysis of the co-authorship network of scientists and researchers in the region reveals that there is a network within and extending beyond Northeast Asia that focuses on the region's PM_{2.5} problem, shown in Figure 11. When research is oriented around air pollution, as is the case in cross-national research collaborations in Northeast Asia,⁷⁰ a foundation is laid for collaborative patenting efforts and the creation of a growth trajectory reliant upon green technologies.

Future research about transboundary air pollution must continue to be holistic in nature. With sufficient understanding, our knowledge of the Northeast Asian case will prove useful for other transboundary air pollution geographies, such as the Saharan dust that disperses in much larger quantities and over much greater distances than Asian dust.⁷¹ The lessons learned from Northeast Asia can become yet another model for economic and sustainable development in parts of the world faced with similar environmental conditions.



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INTRODUCTION

Korea faces the challenges of low and stagnating factor productivity, rising social inequality, and unsustainable demographic change while striving to maintain economic growth. Until the 1997 financial crisis, Korea experienced rapid growth with a modest level of economic inequality and healthy population growth. In the 1990s and 2000s, the Korean manufacturing sector expanded its production, exporting capability, and factor productivity. The services sector followed its lead in the 2000s when financial and technology firms joined the international market for high value-added services. Korean firms' success is to a large degree due to rapid upskilling and high motivation of the Korean workforce.¹ Correspondingly, workers' earnings and working conditions have improved dramatically in the past two decades.² These positive trends have not, however, been equally distributed across economic sectors and groups of workers. Notable pockets of systematically underutilized workers have arisen, through a mismatch between their skills and jobs. This affects labor productivity as well as – through workers' skill-acquisition and family-planning decisions – long-term demographic trends.

The gap between the rich and the poor in Korea has risen, and the relative poverty rate doubled during the 2000s and has stagnated since.³ Deprivation among marginalized workers – such as the elderly, youth and women – is stubbornly high, and social mobility is low. Moreover, over the past decade, the Korean population has rapidly aged as the baby-boom generation reach retirement age and the fertility rate drops to all-time lows following years of government family-control policies and various constraints that child-bearing women faced in the labor market. An aging population stands to negatively impact economic growth, labor-market productivity and social inequality in the decades to come, as the economy fails to adapt and integrate the elderly, childbearing women, and other nontraditional workers effectively.⁴

This lack of effective labor integration is partly due to patchy laws and structural barriers in the labor market that prevent workers from effectively demonstrating their skills or negotiating their working conditions, and limit firms' human resource management (HRM) to options made available to them by sector-specific regulations and norms. The labor market is not sufficiently flexible to assign all workers to best-fitting jobs, or to guide them to invest in the needed sets of skills. Women who get married or return from maternity leave are relegated to non-regular jobs, rather than being put on an alternative schedule or being retrained. Elderly workers whose utility to employers may potentially diminish or increase non-pay costs face similar circumstances.⁵

In general, workers are trapped in particular industrial sectors and career paths, with predetermined working conditions, not because of their existing skills and potential, but because of HRM constraints and path dependency. Workers have

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PRESENT LABOR MARKET ORGANIZATION AND ITS FAULTS

Labor markets are typically not paragons of perfectly competitive markets that would be predicted to produce welfare-maximizing outcomes. In Korea, the imperfections are accentuated by a unique interdependence between business conglomerates (*chaebol*), SMEs, and the government; by a system of inconsistent unevenly-enforced laws; and by inadequate social protections. Several features of the present organization of Korean labor markets cause particular rigidity in labor relations, prevent effective coordination of the supply and demand of skills, and yield inequitable and inefficient outcomes for workers and employers. This section reviews these faults.

Chaebol vs. SMEs

First, as has been widely documented in existing studies, a state of dualism exists in the business climate faced by firms, namely between the *chaebol* and SMEs. The *chaebol* are capital-intensive, export-oriented, typically manufacturing firms that remain at the forefront by investing in innovation and dynamism. The *chaebol*, thanks to their formal qualifications and perceived reliability, have access to the best corporate and government tenders, credit lines, retail space, and other factors of production. By their nature they have a holdout (monopsony) power over their suppliers. They also operate under the spotlight of regulation and customer scrutiny, and for the most part comply with equal opportunity laws and government-mandated or recommended labor standards. Their position hinges on their ability to avoid government crackdowns and customer backlashes.

SMEs rely much less on dynamism and reputation, and compete more on cost and output than on value of their product. They are to a large extent labor-intensive service firms, whose typical customers are local residents and the *chaebol*. One problem is that service firms face heavy product-market regulation relative to manufacturing, which adversely affects their earning capacity and costs.⁷ At the same time, their HRM is regulated much more loosely, in part due to their numerousness, and in part because regulators and disgruntled workers know that it is not worth filing complaints. Bankruptcy and reorganization rates are high. Workers at SMEs are typically barred from associating, receive significantly lower non-pay benefits, and face insecure employment.

The *chaebol* and SMEs face systematically different distributions of skills in their applicant pools, and different incentives and constraints on the procurement and management of human capital. Workers clearly prefer being hired by the *chaebol*, and only consider SMEs once they fail with the former group of employers. In this respect, one may distinguish primary and secondary labor markets, in which employers and workers compete within their segments but not across the fault lines. Once workers join the secondary labor market, they face an uphill

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temporary and part-time employment diminishes firms' incentives – and workers' own capability – to invest in workers' human capital.^{14,15} Finally, growth of non-regular employment leads to an enduring dispersion in incomes and working conditions in the economy. This is exacerbated by the erosion of disadvantaged workers' skills and by the consequences for the opportunities of workers' families and children.

Unresolved Uncertainty Over Workers' Productivity

Another typical failure of labor markets – causing particular rifts in Korea under existing market norms and regulations, as this section will argue – is the inability of firms and workers to effectively resolve the uncertainty over workers' productivity. In recruitment and in the ensuing employer-worker relationships (in granting promotions or other career-advancing opportunities), employers cannot rid themselves of the risk of making wrong selections and HRM decisions. While firm performance depends crucially on their ability to select the best-qualified people and manage them through the workers' tenure with the firm, the employers' ability to assess, select, and nurture talent is limited by patchy anti-discrimination regulations and imprecision of the available signals for workers' skills. Employers are prohibited from using some types of personal information for workers in their HRM decisions, but enforcement is uneven across various types of information collected, and across employers in the primary versus secondary labor markets, regular versus non-regular workers, and employers versus recruiting agencies. Screening a candidate's personal characteristics is prohibited, but looking into their family background is tolerated. Legal loopholes and special concessions also breed duality in the labor markets, whereby some firms and workers have better opportunities than others. Regular or unionized workers are protected at the expense of non-regular workers or job applicants. Typically only primary-sector employers are inspected by regulators. If firms face significant restrictions on their practices, they outsource to HRM companies that are largely unregulated.

Employers' problems are compounded by workers' self-selection, whereby only workers with the best observable signals – but possibly mediocre productivity – apply for positions where those signals are screened, and moral hazard, whereby workers' behavior or usable skills change once they are hired. This represents a particularly large risk if workers' effort and skills are difficult to assess, and if workers are shielded from repercussions such as termination by their permanent-employment contracts. An inadequate conflict resolution system between employees and firms prevents the parties from fully agreeing to terms of employment before hiring, or settling disputes efficiently. Corporate norms and regulations provide for limited arbitration, and impose limited civil damages for law violations and contract breaches. Coupled with the lack of systematic enforcement of anti-discrimination laws, this leaves employers with only non-transparent informal ways – reliance on a set of imprecise signals or

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labor market. By prohibiting worker discrimination, but enforcing it selectively across sectors and worker types, the government has distorted employers' behavior in harmful ways.

The implications of uncertain worker productivity are that even equally skilled and qualified workers may end up with vastly different careers and lifetime earnings, as workers are not matched efficiently to jobs in which their productivity is highest. Employers may not hire the correct number and type of workers, consequently failing to minimize their operating costs.¹⁸ Workers' incentives regarding skill acquisition are distorted, as they cannot demonstrate their qualities effectively and instead invest in qualities that are easily observable by employers (e.g., physical appearance, certifications of aptitude with computer programs or languages), even if these have little bearing on workers' ultimate productivity at particular firms. The problems due to the lack of opportunities for workers to prove themselves accumulate throughout workers' lives, and even across generations. Fresh graduates with an inferior set of signals such as disadvantaged backgrounds are not in the pool for best starting jobs, which will limit their career paths throughout their lives. These workers thus lack motivation to invest in skills most highly valued by primary-sector employers – regardless of the workers' ability to learn.

Inadequate Social Safety Net and (Re)education Policy

Another source of inequality and polarization in the Korean labor market is the inadequate system of care and support for disadvantaged workers. Workers trapped in wrong jobs or sectors, as well as workers with interrupted careers, those with children to take care of, and the long-term unemployed presently lack opportunities to be matched to jobs making use of their best potential. Workers who stray off the appropriate career path (considering their true potential skills) are not given a second chance to join it.¹⁹

Since private markets are traditionally not the best sources of support for unproven workers, and nongovernmental organizations cannot fill that role consistently enough and adequately given their limited budgets and authority, it is the role of legislation and public welfare policy to provide for deprivation-trapped workers, and to facilitate a second chance to workers in order to make use of their potential skills and to match them to best-fitting jobs.

Employment-assistance and (re)education policy: Non-regular workers, workers at small businesses, the unemployed and the self-employed, among others, have limited access to skill-improvement opportunities. Mothers returning from maternity leaves fall behind their cohort of coworkers. This contributes to growing polarization in the society, as these workers fail to adapt to skill-biased changes in the labor market, and lag more and more behind other workers in their qualifications. Policies that offer retraining to these marginalized workers, or policies that condition collection of public assistance on participation in

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has enacted a number of laws, market regulations, and social welfare programs to facilitate more equitable and efficient labor market outcomes.²⁶ Despite these efforts, little equalization across workers has occurred, because laws are poorly enforced using weak sanctions, have loopholes or have unintended consequences. Even today, the climate in which employers and workers interact is permeated with obstacles, as the previous sections outlined, and further policy reforms are warranted. This section reviews recent steps at correcting labor-market faults and outlines promising directions for further policy action. Table 1 provides a brief summary of the problems, existing policy responses, and recommendations for further policy reform.

Chaebol vs. SMEs

The government has introduced initiatives to increase productivity at SMEs, and to help un-trap SMEs from stagnation by providing financial support and preferential opportunities to them, but the preferential arrangements have for the most part encouraged SMEs to remain SMEs.²⁷ The government has also promoted cooperation between SMEs and large firms (including publicly-owned organizations) with subsidies and preferential treatment, but these have limited effects on long-term coexistence and relations among firms.²⁸

Less attention has been paid to the transition of small firms into medium-sized ones, and their expansion across sectors.²⁹ The government should work more on leveling the competitive field among different types of firms by removing preferential access to tenders and credit (that the *chaebol* traditionally enjoyed and that SMEs have now received access to), and regulatory exceptions that SMEs operate under. The government has taken steps to encourage competition and equalize opportunities across industries and firm types, by removing product-market regulation and cross-sector regulatory burdens. The Framework Act on Administrative Regulations (amended 2013) and a *cost-in, cost-out* system were implemented under which the overall burden of regulation should not increase, and for any new regulation at least one equally burdensome existing regulation should be struck down.³⁰ This deregulatory measure is expected to benefit all firms. It is unclear, however, whether SMEs or large firms stand to gain more, and how the relative position of SMEs and their long-term prospects for expansion will be affected.

The government has also provided some support for entrepreneurship and consolidation through encouragement of venture-capital investment and of mergers and acquisitions among small and medium-sized firms. Specifically in relation to high value-added services, the consulting and legal markets have opened up to foreign competition and capital, and medical and educational service markets are on the path to be opened up.³¹

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This will facilitate labor mobility across sectors and jobs, and improve dedication and qualifications among non-regular workers, in turn benefiting employers themselves. Intra-firm differences between regular and non-regular workers should be narrowed by streamlining the switching of non-regular workers into regular positions.³⁷ This should involve some relaxation of employment protection for regular workers while strengthening the protection and enforcing the rights of non-regular workers.³⁸

Uncertainty Over Workers' Productivity

In recent years the government has made various strides toward limiting discrimination by employers and contracting agencies, improving skills of disadvantaged workers, offering subsidies to employers for hiring them, and cleaning up its own act by recruiting workers with nontraditional backgrounds. However, more needs to be done.

The degree of job security of regular workers needs to be reduced to make hiring regular workers a less weighty decision, and to bring the standards closer to those for non-regular workers. The government should educate and encourage firms to introduce negotiable employment contracts under which compensation and working conditions could be up for agreement between employers and individual workers. This will allow employers to offer tentative terms to workers who have not proved themselves, and will allow workers to be open about their own needs, such as receiving time off to take care of dependents.

While discrimination in labor relations has been made illegal, and various channels have been established to identify cases of discrimination, more needs to be done to systematically and meaningfully punish wrongdoers, protect whistleblowers, and empower workers to respond to discriminatory practices in ways that will not disadvantage them and without incriminating themselves (e.g., lie to discriminatory questions during interviews without fearing subsequent termination). Enforcement of equal-opportunities laws should lie with industry and human rights watchdogs (such as the National Human Rights Commission), be systematic and cover all employers and all types of workers, and penalties for non-compliance should include criminal charges and compensatory damages to victims.

Social Safety Net and (Re)education Policy

The area in which the government is arguably bringing reforms most actively is welfare protection. This section reviews the main existing public programs for the promotion of employment, workers' human capital, and the application of that human capital to the most appropriate uses.

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workers, and firm competitiveness and factor productivity. The JSDP also offers vocational training for the unemployed and low-income workers, including initial training at public training centers and follow-up training at firms.⁴⁹ Limitations of this program have included insufficient capacity to provide training, staffing shortages, high turnover rates among clients, and unequal services offered to different groups of workers.

The UBP aims to improve efficiency of the national labor distribution by enhancing the quality of reemployment. It serves as the primary social safety net for the unemployed, granting allowances to those unemployable due to illness, injury, or mass layoffs.⁵⁰ Limitations of the UBP are that the legally prescribed duration of benefits and the duration of actual benefit payment are short (up to 210 days, and 110 days, respectively) and eligibility criteria are strict.⁵¹ As a result, many unemployed people are ineligible, and the long-term unemployed receive inadequate support.

Assistance to the working poor and the self-employed: Support for the working poor in the secondary labor market, particularly the self-employed in the service sector, is presently insufficient.⁵² The self-employed presently lack access to training opportunities because existing programs are not best suitable for them, or because they are ineligible until they become unemployed. Policy solutions for the low-income self-employed would include creation of new middle-income jobs in social services, assisting low-income self-employed workers to build collaborative support networks, providing them with access to re-education, retraining and other safety net features, and improving their access to capital and credit to allow them to grow into medium-size businesses. The JSDP aims to improve the qualifications of marginalized workers, but has not entirely succeeded at bridging the opportunity gap.⁵³

The Basic Livelihood Security Program (BLSP) was expanded in 2014, and the eligibility criteria for unemployment benefits have been relaxed. The government plans expanding Employment Security Centers as hubs of employment services in local communities providing counseling and job-placement services. To encourage job seekers to search actively and to participate in available skill-improvement opportunities, the government plans to lower unemployment benefits.

Childcare assistance: Working parents face particular hurdles managing their professional and family lives. This is mostly the case of mothers, for cultural reasons and since paternal leave is effectively nonexistent. Working mothers require access to childcare, and shorter work days or flexible working conditions to take care of their children. Mothers re-entering the labor market also face the hurdle of catching up with their cohort of coworkers – and proving their value to their employers given attrition of their skills and gap in experience.⁵⁴

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slow or misguided. Nevertheless, the concerted efforts of various government institutes to tackling a common problem, and the ongoing tripartite negotiation over the equitable and efficient organization of the future labor market, are a good sign of future improvements to come. The hope is that the voluntary, open-ended, all-parties-inclusive deliberation process itself will help to clarify all positions and stakes, and through the created knowledge-exchange and goodwill will help to heal the deepest faults of labor market structure.

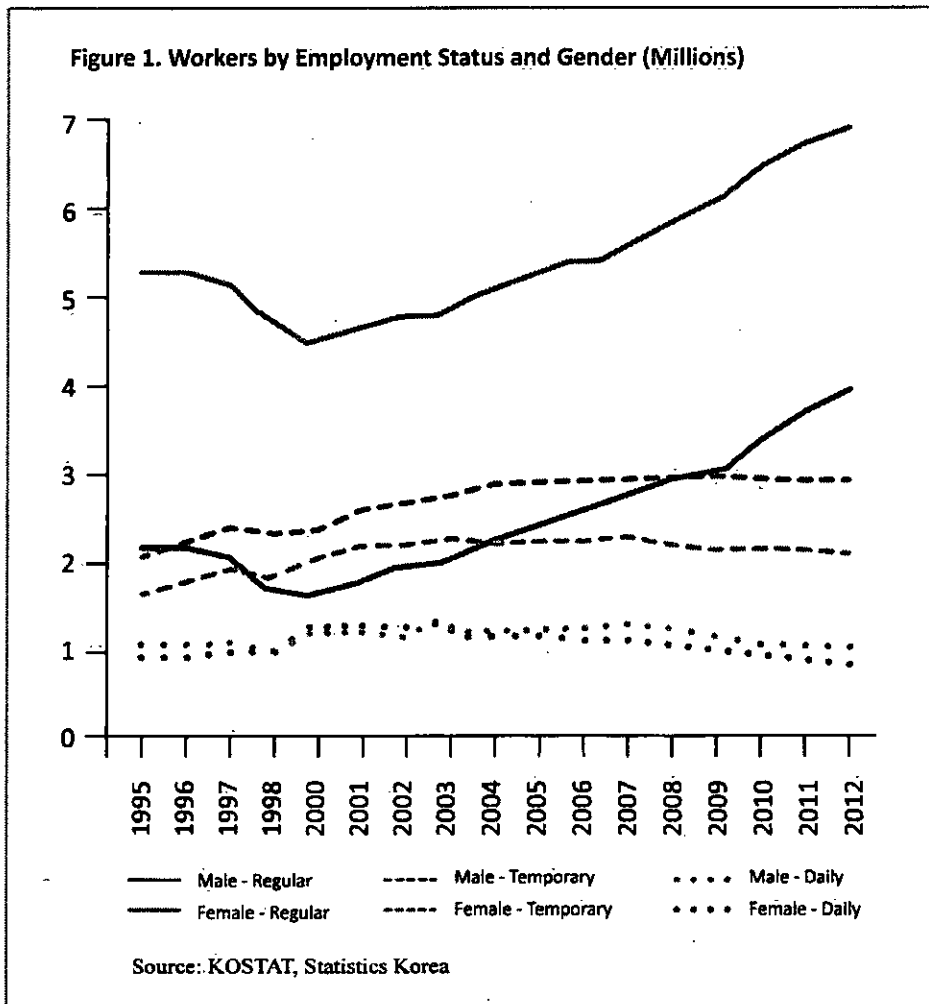


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Insurance Coverage in Korea,” e-Labor News 119 - Issue paper (2013), www.kli.re.kr/downloadBbsFile.do?atchmfnfNo=9938.

- 20 The relationship between the importance of education and the changing nature of social inequality is evident from the rise in average family expenditures on formal and after-school education, and the growing disparity in these expenditures across social groups, see Yoo et al. 2009. Families with higher incomes and particularly higher wealth have channeled higher resources to their children’s private education, and the disparity grows over time. The differences in educational opportunities across social classes are perhaps most clearly discernible geographically: Seoul’s Gangnam (south of the Han River) district where the wealthy reside is also home to top-ranking private tutoring institutes, whereas Gangbuk (north of the Han River) has been falling behind in terms of the provision of private as well as public educational opportunities, see Koo, 2007. Availability of educational opportunities and expenditures on education are also much higher in Seoul and the surrounding Kyonggi Province than in poorer regions such as the southern-most Jeolla Province. As Korean educational system becomes more internationalized, wealthy Korean families are increasingly looking for superior educational opportunities overseas while poor income families cannot afford them, see Yoo et al. 2009. Also see Lee, Y., M. Moon, M. Kim and S. Yang, “A Survey on the Current Status of Hakwons (private academies) for Young Children in Korea,” Research Project-05, Korea Institute of Child Care and Education, Seoul (2009).
- 21 Hyun, Jin Kwon, and Byung-In Lim, “The Financial Crisis and Income Distribution in Korea: The Role of Income Tax Policy,” *Journal of the Korean Economy* 6(1) (2005): pp. 51-65, www.akes.or.kr/akes/downloadfile/3.hyun6-1final050518.pdf. Shin, Donggyun, “Bipolarization of the Income Distribution after the Recent Financial Crisis: Trends, Causes, and Policy Implications,” *Study of Economics* 55(4) (2007): pp. 503-548.
- 22 Data from KOSTAT, Statistics Korea.
- 23 Until recently, national government contributed to the problem of educational elitism by emphasizing education at top universities for public-sector hires, and giving preference to graduates from Seoul National University and other top universities. Government also continues to provide some of the most stable and high-status jobs in the economy, thus diverting talent away from the private sector. Annually, thousands of students expend significant resources to study for and take civil service examination. During 2007–2009, 307 mid-ranking government workers were recruited through the examination per year. 70.4 percent of the 307 were graduates of Seoul National, Korea and Yonsei Universities.
- 24 Hlasny, Vladimir, “Economic Determinants of Applicant Screening Practices: An Empirical Analysis of the Human Capital Corporate Panel,” Proceedings of the 4th HCCP Conference, Seoul, September 2012; Ewha Womans University working paper. See also Hlasny, Vladimir, “High Stakes in Education: A Public Policy Failure,” *Korea Herald, Feature & Analysis* (April 2, 2012).
- 25 Statistical analysis of the Korean Household Income and Expenditure Survey and the Farm Household Income and Expenditure Survey (2006) provides some corroborating evidence. Identifying an income gap between households headed by educated versus non-educated heads, and decomposing it into contributions of various household endowments versus the returns to those endowments, the following results emerge: Education gap is due in part to the fact that less educated workers have a harder time finding employment, regardless of their other characteristics. In other words, workers who are less formally educated receive lower credit for their other endowments – such as age, residence closer to main labor markets, or family status – and are not given a chance to prove themselves. As would be expected, if non-educated workers find employment, they earn lower income than educated ones. See Hlasny, Vladimir, “Different Faces of Inequality Across Asia: Income Gaps Across Demographic Groups,” Asian Development Bank Institute working paper, forthcoming 2016.
- 26 Dao, Mai, Davide Furceri, Jisoo Hwang, Meeyoung Kim, and Tae-Jeong Kim, “Strategies for Reforming Korea’s Labor Market to Foster Growth,” IMF Working

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- Service in Korea: Its Past, Present and Future,” KLI (2004), www.kli.re.kr/downloadBbsFile.do?atchmnmfNo=10157.
- ⁴⁰ ESCs provide employment insurance activities including management of benefit eligibility; employment stabilization program offering employment subsidies to employers; maternity-leave benefits and child-care leave benefits; and approval of eligibility and payment of unemployment benefits, see *Employment Research Center, Employment Insurance Review*, Korea Labor Institute, Spring 1999 and Keum et al. 2006. The ESC system comprises many programs targeting employers, all designed to promote employment adjustments and job creation.
- ⁴¹ Lee, Byung-Hee, “Quasi-experimental Evaluation on the Impact of the Training for the Unemployed,” Korea Labor Economic Society *Journal of Labor Economics* 23(2) (2000). Noh, Yong-Jin, “Job Skills Development: Status and Challenges,” (2005)
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- ⁴³ Lee, Byung-Hee, “Is Levy-Grant Scheme for Employer-Provided Training Effective? The Experience of Korean Employment Insurance System,” *Seoul Journal of Economics* 2(2) (2004): pp. 235-253, www.kli.re.kr/downloadBbsFile.do?atchmnmfNo=10049.
- ⁴⁴ “Report on Transferring the EIS Beneficiary Management Duties to the KLWC,” Korea Labor Welfare Corporation (KLWC) report (2005).
- ⁴⁵ Noh, 2005.
- ⁴⁶ Market share of public employment service (the ratio of employment through public employment services to total hiring) in major countries is 22–33% in Germany, Japan, UK and France while it is only 5% in Korea. See Ministry of Employment and Labor, *Advancement Strategy of Employment Service*, policy report (2005).
- ⁴⁷ Kim, Woo-Young, “How to Apply Variable Rates to the UBP,” Seminar on EIS Development and Financial Stability (May 10, 2005).
- ⁴⁸ Noh, 2005.
- ⁴⁹ Kim, 2005.
- ⁵⁰ KLWC, 2005.
- ⁵¹ Lee, 2004; Keum, Jaeho, Jiyeon Chang, Deok-Soon Hwang, Dong-Heon Kim, Jooseop Kim, Byung-Hee Lee, Kyu-Yong Lee, Seong-Jae Park, and Kil-sang Yoo, “Employment Insurance in Korea: The First Ten Years,” Korea Labor Institute, Seoul (2006), www.kli.re.kr/downloadEngPblFile.do?atchmnmfNo=18653.
- ⁵² As of 2010, small business owners received average monthly earnings of only 1,491,000 won. 57.6% of them earned less than 1 million won, including 26.8% who incur losses or no earnings. The ratio of debt to disposable household income was twice as high among self-employed workers as among salaried workers. See Small and Medium Business Administration, *2010 Survey of Nation’s Small Merchants*, SMBA report.
- ⁵³ Kim, 2005.
- ⁵⁴ Hwang, Soo Kyeong, and Jiyeun Chang, “Female Labor Supply and Labor Policies for Female Workers in Korea,” Korea Labor Institute Issue Paper 30, Seoul (2004), www.kli.re.kr/kli_eng/elabor/30/papers/paper1.pdf. Kim, Juyoung, “Women’s Career Disconnect and Reentry into the Labor Market,” *e-Labor News* 104 (2010), www.kli.re.kr/kli/html_eng/08_mail/webzineboard/upfile/e_104.pdf. Kim, Juyoung, and Seok-Jin Woo, “Study on Reentering the Labor Market,” Korea Labor Institute (2010), www.kli.re.kr/kli_eng/engRsrchReprtView.do?key=382&pbjctListNo=6774.

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INTRODUCTION

In economic theory, the flow-oriented model of exchange rate behavior posits that currency movement affects a nation's international competitiveness and its balance of trade, and consequently, its real output.¹ This affects a company's current and future cash flows and its stock prices. It is generally believed that currency depreciation improves a country's trade balance – exports become cheaper, which increases aggregate demand and raises the level of economic activity. Thus there is a relationship between exchange rate and stock returns, and currency depreciation expectedly increases stock returns in the economy. The stock-oriented model emphasizes the role of capital account in the determination of a country's exchange rate. According to Adjasi and Biekpe, exchange rate equates demand and supply of financial assets such as stocks and bonds; thus, expectations of future exchange rate movements affect the prices of financial assets.² In the stock-oriented model, fluctuations in exchange rates affect stock prices. For arbitrage pricing theory, Rashid and Karachi postulate that a rise in the real interest rate will reduce the present value of future cash flows; consequently, the stock returns will fall.³ But a rise in the real interest rate will increase capital inflow into an economy and cause the domestic currency to appreciate. An appreciation in the domestic currency will then result in a decrease in stock returns. Fluctuations in real interest rates affect exchange rates and stock returns, and the arbitrage pricing theory assumes that movements in exchange rates affect stock returns.

All three models on the relation between exchange rate and stock returns postulate that exchange rate affects stock returns. Under a floating exchange rate regime, currency depreciation expectedly increases stock returns while an appreciation is expected to decrease stock returns. Although most empirical studies have provided evidence of a significant link between exchange rate and stock returns, the direction of impact of changes in exchange rate on stock returns have varied considerably across studies. As discussed in the ensuing section, the relation between exchange rate and stock returns can be either positive or negative depending on economic reasons and also some econometric factors such as the methodology used and the sample period and countries under study. According to Phylaktis and Ravazzolo, the significant relation between exchange rate and stock returns in emerging markets could be attributed to an important variable that acts as a channel through which exchange rate affects stock returns.⁴ One such variable is the world capital market, often represented by the U.S. stock market.

The South Korean *won* has recently witnessed a sharp decline in its value against the U.S. dollar. South Korea receives a large fraction of total FDI inflows in Asia; thus the value of stocks traded in South Korea is essential for stable economic growth and development in the region, even more so because of the volume of foreign investment the country receives. In recent times, efforts have been made

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Secondly, although efforts have been made to strengthen stock market integration between Korea and Japan, some studies have indicated weak integration between Asian stock markets. Thirdly, the inclusion of the Japanese stock market allows us to also examine the influence of both international and regional capital markets on stock transactions in the Republic of Korea.

The data on the real effective exchange rate is obtained from the Organization for Economic Co-operation and Development (OECD). The real effective exchange rate is the weighted average of the bilateral real exchange rates. An increase in the real effective exchange rate index would imply appreciation while a decrease in the index would imply depreciation. The volatility in the real effective exchange rate is measured by the standard deviation of the real effective exchange rate from the mean.

The Model: The lack of a causal relation between real exchange rate and stock returns in a bivariate model is often attributed to the omission of an important variable from the system. The variable omitted is usually stock transactions in a foreign country, which represents the influence of the international capital market. The variable is also found to act as a channel through which the real exchange rate affects stock transactions in the domestic economy. For this reason, a trivariate model is preferred to a bivariate system.

Following Phylaktis and Ravazzolo, the long-run relation between volatility in the real effective exchange rate and the total share prices in Japan and Korea is examined by estimating a trivariate model of the following form:

$$(1) \Delta SPIK_t = a + b (VREX)_t + c (SPIJ)_t + \varepsilon_t$$

The model in (1) shows the long-run effects of the volatility in the real effective exchange rate and changes in the total share prices in Japan on the total share prices in the Republic of Korea.

A vector error correction representation of the model in (1) with k lags and r cointegrating vectors with a linear trend in the levels of the data is given by:

$$(2) \Delta Y_t = X + AY_{t-1} + \sum_{i=1}^k \phi_i \Delta Y_{t-i} + \mu_t$$

Estimation Method: The Dickey Fuller-Generalized Least Squares (DF-GLS) unit root test proposed by Elliott, Rothenberg and Stock is first performed to examine stationarity in each variable.³¹ The DF-GLS unit root test is performed since it possesses greater power properties than the traditional ADF test. The optimum number of lags for the vector error correction model is selected by Akaike Information Criteria (AIC). The Johansen cointegration

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Johansen Cointegration Test: The variables are $I(1)$. Since the variables are first-difference stationary, the Johansen cointegration test is performed next. Since AIC selected a model with 1 lag, the cointegration test is performed with 1 lag. The results are reported in Table 2.

The maximum rank of the cointegrating matrix is 0; thus the model fails to reject the null hypothesis that there is no long-run relationship between the three variables.

The general form of a VAR model with k variables that are expressed as linear functions of their own lags and that of other variables is represented by:

$$(3) Y_t = V + A_1 Y_{t-1} + \dots + A_p Y_{t-p} + \mu_t$$

In the equation above, Y_t is a $k \times 1$ vector of variables, A_1, \dots, A_p are $k \times k$ matrices of parameters, V is a $k \times 1$ vector of parameters and μ_t follows a white noise process. The errors are distributed with mean 0 and are uncorrelated.

Since the variables are $I(1)$ with no cointegration, a first-order differenced VAR model is estimated with 6 lags selected by AIC. The results are reported in Table 3.

In Table 3, the short-run coefficient 0.55 for the first difference in share price index in Korea at lag 5 is significant at 1% significance level; the short-run coefficients 0.38, -0.26 and 0.18 for the first differences in exchange rate volatility at lags 2, 3 and 5 are significant at 1%, 5% and 10% significance level, respectively; the short-run coefficients 0.36 and -0.42 for the first differences in share price index in Japan at lags 3 and 4 are significant at 1% significance level. Thus the effects of the past values of the variables on total share prices in Korea are mixed and mostly insignificant. Volatility in real effective exchange rate and total share prices in Japan are thus found to have both significant positive and negative effects on the total share prices in Korea.

The line of causality is examined by performing the Granger causality test. Volatility in the real effective exchange rate, for instance, will Granger cause total share prices in Korea if, given the past values of the total share prices in Korea, the past values of the real effective exchange rate volatility are useful for predicting share prices in Korea. The total share prices in Korea are regressed on its own lagged values and also on the lagged values of real exchange rate volatility. The null hypothesis that the estimated coefficients of the lagged values of real exchange rate volatility are jointly zero is then tested. The results of the Granger causality test are reported in Table 4.

The chi-square statistics reported in Table 4 are significant at 1% significance level. The results indicate bidirectional causality between volatility in the real effective exchange rate and total share prices in Korea, and between volatility in the real effective exchange rate and total share prices in Japan. Bidirectional causality is also observed between the total share prices in Korea and Japan.

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Table 3
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	Coefficient	Standard Error	Probability
$\Delta SPIJ_{t-5}$	0.12	0.17	0.46
$\Delta SPIJ_{t-6}$	0.16	0.15	0.29
Constant	0.82	0.82	0.31

The short-term causality from volatility in the real effective exchange rate to total share prices in Korea indicates a close link between the real effective exchange rate index and stocks traded in Korea. An increase or decrease in the real effective exchange rate index (currency appreciation or depreciation) would lead to an increase or a decrease in stock transactions in Korea. Thus there is a short-term causal link between the stock market and the foreign exchange market in Korea. According to Phylaktis and Ravazzolo, the relaxation of foreign exchange restrictions may be a necessary condition for the link between foreign exchange and stock markets.³⁴ The degree of exchange rate flexibility may also have a significant role in the causal relation between the foreign exchange market and the stock market in Korea. Thus changes in the exchange rate policy will most likely have an immediate effect on stock market transactions and foreign investment in the Korean economy.

Granger causality further indicates that stock transactions in Japan have a significant effect on the local stock market in Korea. This reflects interdependence and integration of Korea's stock market with the Japanese stock market. There are several factors that influence stock market integration. As Phylaktis and Ravazzolo explained, apart from having access to capital market itself, access to local market information is necessary for international investments to take place.³⁵ Some determinants of market integration include regional trade openness and market development, trade balance and interest rate differential, total trade, industrial production, inflation rate, short-term interest rate, exchange rate volatility, and bilateral FDI intensity.³⁶ However, according to Bekaert and Harvey and Levine and Zervos, liberalization may not necessarily attract foreign investment due to home bias in equity portfolio, country-specific risks, and access to local market information on company stocks.³⁷ Institutional rigidities and international differences in tax laws, as discussed in Feldstein and Horioka, could affect capital mobility across countries and affect the degree of financial integration between countries.³⁸ According to Levine and Zervos, countries that publish information about a firm, such as its price-earnings ratio more comprehensively and internationally, will have better chances of developing a more globally integrated stock market than countries that do not make such information available to the potential investors.³⁹

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Normality	chi-square statistic	degrees of freedom	probability
Jarque-Bera	0.06	2	0.97
R ² : 0.72			

CONCLUSION

This paper investigates the cointegrating and causal relationships between volatility in the real effective exchange rate and stock transactions in the Republic of Korea. The effects of changes in stock transactions in Japan on the stock market in Korea are also examined. Although the variables are found to be integrated of order one, the Johansen cointegration test does not support long-run relationship between the variables. Thus the variables are found to be I(1) with no cointegration. A first-order differenced VAR model is estimated. Granger causality indicates short-run bidirectional causality between volatility in the real effective exchange rate and stock transactions in Korea. The results, therefore, indicate a close association between the stock market and the foreign exchange market in Korea. Granger causality also indicates short-run bidirectional causality between stock transactions in Korea and Japan. This provides evidence of stock market interdependence and financial integration of the stock market in Korea with the Japanese capital market.

The Republic of Korea has had a floating exchange rate policy over the years. As far as policy implications are concerned, if flexibility in the real effective exchange rate plays a crucial role in the close association between the foreign exchange and stock markets in Korea, then the Korean government can use the exchange rate as a policy instrument to increase foreign portfolio investment in the country. Exchange rate flexibility could therefore play a significant role in the link between the stock markets in Korea and Japan. The design and implementation of appropriate monetary and fiscal policies may further integrate the Korean stock market with the international capital market and attract more foreign investment. Also, cooperation with foreign stock markets may further increase the inflow of foreign capital into Korea and promote sustainable economic growth and development in the region in the long-run. Since exchange rate volatility significantly affects stock returns, it might be necessary for the central bank to intervene when there is excessive exchange rate volatility to restore stability and investors' confidence. According to Sichoongwe, it might also be necessary to use efficient hedging instruments to eliminate the negative effects of exchange rate volatility.⁴⁰

It might be interesting to include more control variables and examine the sensitivity of the short-run and long-run dynamics to the presence of structural breaks in the data. Studies that have examined the relation between exchange rate and stock returns with or without structural breaks in the data have reported short-term causal relation between the stock market and the foreign exchange market. Therefore, the results are consistent with the findings in the existing literature.

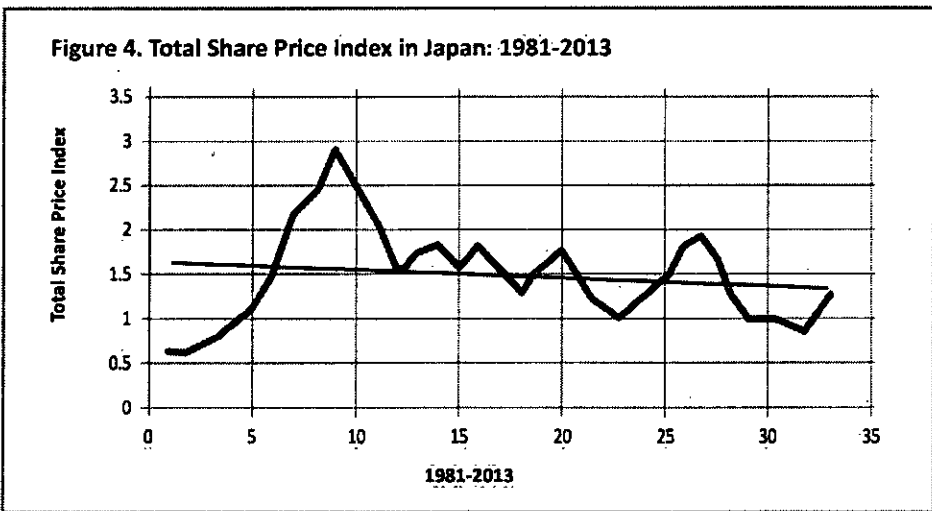
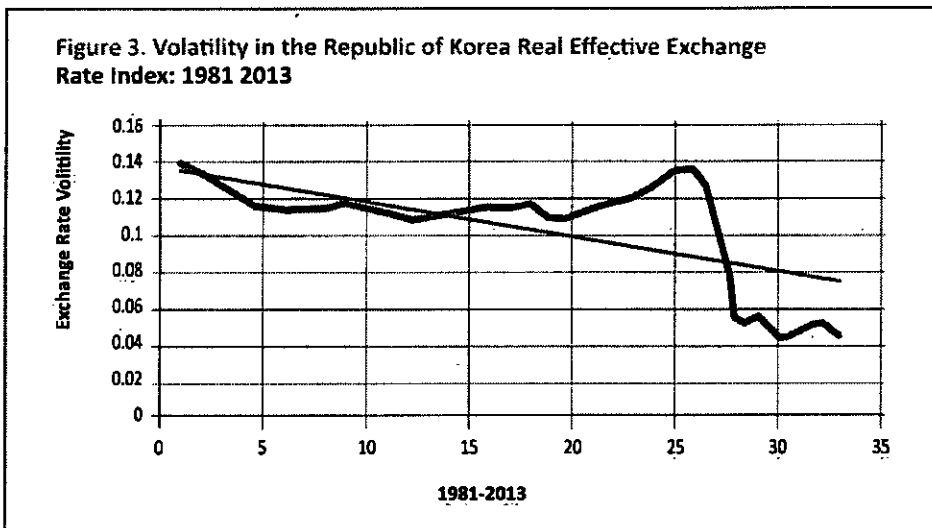
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Real Effective Exchange Rate Index

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Total Share Price Index



ENDNOTES

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between volatility in the real effective exchange rate and stock returns in Korea; (iv) the implications for the MNCs in investment decisions and foreign exchange exposure. The cointegration technique is applied since it addresses problems related to nonstationarity in the data when examining the relation between the variables in both levels and differences.

Literature Review

This paper builds on Phylaktis and Ravazzolo who studied the short-run and long-run relation between stock prices and exchange rates for five Pacific Basin countries, namely, Hong Kong, Singapore, Malaysia, Thailand and the Philippines.⁹ They applied the cointegration technique and performed Granger causality tests for each country. They found a positive relation between the stock and the foreign exchange markets. They also found that the U.S. stock market acts as a channel for the links between the stock and the foreign exchange markets.

Numerous other studies have estimated both linear and non-linear models and examined the relationship between the real exchange rate and stock returns and also between volatility in the real exchange rate and stock returns. For example, Soenen and Hennigar reported a significantly negative relation between exchange rate and stock returns.¹⁰ Roll used daily data on stock returns, found a positive relation between the two.¹¹ Chow et al. found no relation between monthly stock returns and the real exchange rate.¹² In a study of eight industrial economies, Solnik observed a negative relationship between exchange rate and stock returns.¹³ Ma and Kao, studying six countries, reported a negative relationship between domestic currency appreciation and domestic stock prices for the export-dominant country.¹⁴ A study by Choi also confirmed this relationship.¹⁵ Muhammad and Rasheed reported long-run relationship between exchange rate and stock prices for some but not for all countries in his sample of four South Asian countries.¹⁶ Olugbenga reported a significantly positive short-run relationship between exchange rate and stock market performance, and a significantly negative relation between the variables in the long-run.¹⁷

Some of the earlier studies on stock market volatility include Engle and Bollerslev.¹⁸ In general, empirical studies on the effects of exchange rate volatility on share prices and share price fluctuations have also reported mixed results. For instance, Aggarwal and Soenan and Hennigar observed a significant impact of exchange rate volatility on share price volatility.¹⁹ Najang and Seifent reported unidirectional causal effect from exchange rate volatility to fluctuations in share prices.²⁰ Ajayi et al. also reported unidirectional causality from exchange rate to share prices.²¹ Vygodina reported unidirectional causality from exchange rate to volatility in stock returns.²² According to Smyth and Nadha, the causality from exchange rate to share price volatility is unidirectional for some countries and bidirectional for others, at least in the short-run.²³ The variables are found to be independent in the long-run.

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Structural Problems	Existing/proposed policy	Recommended further action
(Re)education policy and social safety net	<ul style="list-style-type: none"> - Provide employment assistance - Provide support for employment stabilization, hiring expansion, work sharing - Provide re-training opportunities for disadvantaged workers - Expand childcare services - Support reentry of career-interrupted women - Increase incentives of the unemployed to find jobs (by lowering unemployment benefits) - Expand eligibility coverage for unemployment benefits - Extend allowed duration of benefit collection - Encourage dialogue between government, business & labor groups 	<ul style="list-style-type: none"> - Improve funding & quality of services - Improve convenience for beneficiaries - Improve access to & quality of services - Improve provision of childcare without stretching public resources, by engaging local governments & NGOs - Promote paternal leave effectively - Guide the tripartite reform process by stressing technical benchmarks & timeline, formal commitments of all parties, sanctions

ENDNOTES

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- 3 Economic Survey of Korea 2016, OECD (2016), www.oecd.org/eco/economic-survey-korea.htm.
- 4 Lee, Changwon, "Wage Structure Reform and Labor Market Flexibility: The Case of South Korea," Centre for Wage and Job Research, Korea Labor Institute (2015), www.iler2015.com/dynamic/full/IL131.pdf.
- 5 There are significant differences in training opportunities across genders, age groups and education backgrounds. For example, women lack opportunities for promotion and raises due to employers' lower expectations over their skills or dedication. This makes it difficult for women to advance in their careers, and yields higher turnover rates among women. In response, employers offer women even fewer training opportunities, leading to a vicious cycle and an 'opportunity poverty' trap as discussed in Kim, 2005. Similarly, workers with less education who are most in need of training receive fewer training opportunities than highly educated and skilled employees. This is because the training decisions are made by employers rather than workers themselves, and the decisions are derailed by employers' imperfect information, expectations, and possibly even personal biases. See Keum et al. 2006.
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