

Regional Economy

Roadmap to a potential crisis on the Korean Peninsula

- Regional geopolitical risk on the rise, as North Korea may already possess some potentially deadly nuclear weapons
- Options available to the outside world, especially the US, are decreasing; the few remaining ones are highly risky and unpalatable
- The US, South Korea, China, Japan and even Taiwan may respond differently; economic implications are undisputedly profound

Kevin Lai

 (852) 2848 4926
 kevin.lai@hk.daiwacm.com

Olivia Xia

 (852) 2773 8736
 olivia.xia@hk.daiwacm.com


Summary: As North Korea continues to develop nuclear-armed intercontinental ballistic missiles, there is growing pressure for the US and its partners to embark on a new, different approach. If the situation is not handled well, we see potential for an escalation, which would almost certainly have negative economic implications across the region.

Diplomacy remains the best available option. We would expect the US to exhaust this option over the next 3-6 months. This would require the US and North Korea to come to the negotiating table. China would be expected to help, but how much assistance it could offer is uncertain. If diplomacy fails again, we think the US and its partners would come under real pressure to think about a few other, unpleasant alternatives.

Leave it alone. This would be the most passive approach to a crisis, which we don't think would make sense to the US, South Korea or Japan.

Military pre-emption. The US and South Korea could take military action against the North. This strategy would carry enormous risks, as no-one can be sure that all of the North's weapons would be eliminated instantly. Even a single retaliatory strike from the North could be catastrophic.

Old-fashioned deterrence is the most likely scenario if diplomacy fails, in our view. President Trump has argued that, in the face of a nuclear threat from the North, South Korea and Japan should arm themselves with nuclear weapons. A nuclear-armed East Asia would be a completely new challenge that would threaten to change many things – let alone the fact that old-fashioned deterrence may not work in the present time.

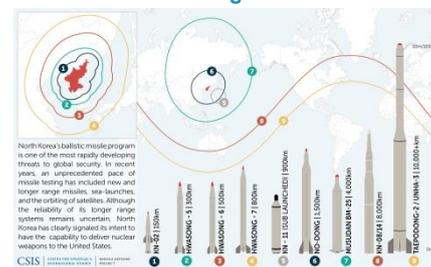
2017 may be the year in which key actions are taken on the Korean Peninsula, which suggests that regional geopolitical risks are at their highest since 1953. Financial markets have almost certainly not priced in these risks.

Four endgame scenarios for the Korean Peninsular

Scenario	How could it happen?	Probability	Economic implications
1. Diplomatic solution	- The US engages in direct negotiations with North Korea, with the help of China. - North Korea would have to agree to terminate its nuclear and missile capabilities. - In return, the US would offer an easing of sanctions and provide other incentives.	40%	Most positive
2. Leave it alone	- The US and its partners tolerate North Korea's possession of nuclear weapons and hope that it never uses them.	10%	Mildly negative and regional security is highly uncertain
3. Military pre-emption	- The US and South Korea take massive military action against North Korea, destroying its known nuclear, missile, and military infrastructure. - This option is almost equivalent to another full-scale peninsular war.	20%	Most negative
4. Old-fashioned deterrence	- The rationale is based on the capacity to inflict so much damage on a potential adversary's population that the potential adversary will be deterred from attacking, no matter how much destruction they themselves are capable of inflicting.	30%	Negative from a long-term economic perspective; regional stability is maintained by a delicate and not exactly stable balance of power

Source: Daiwa

North Korea's existing ballistic missiles



Source: CSIS (reproduced under the permission of CSIS Missile Defense Project)

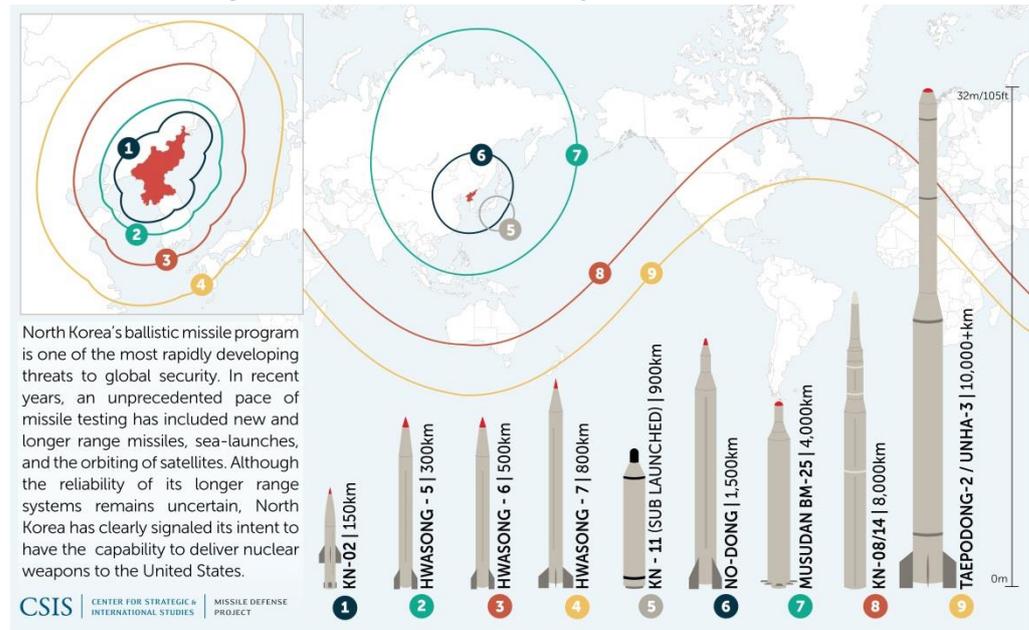
Coping with a nuclear-armed North Korea

Pyongyang may already have a few long-range deadly weapons

Not so long ago, conventional wisdom held that North Korea was nowhere near to possessing any nuclear weapons or an intercontinental ballistic missile (ICBM) capability that the world, especially the US, needed to worry about. Now, it is becoming increasingly clear that the risks posed by North Korea to the region, the US and the world may be far greater than thought. The North has tested nuclear weapons on several occasions and undertaken dozens of ballistic missile tests, including several recent tests that appear to represent major breakthroughs.

According to the Centre of Strategic and International Studies (CSIS), North Korea has pivoted towards a national security strategy based on asymmetric capabilities and weapons of mass destruction. As such, it has invested heavily in building up increasingly longer-range ballistic missiles and the miniaturisation of its nascent nuclear weapons stockpile. North Korea is reliant on these capabilities to hold the US, its allied forces and civilian areas at risk. The CSIS's Missile Defense Project provides a good account of North Korea's wide range of missile capabilities, how frequently North Korea has conducted missile tests, and how close some of those missiles could come to American soil (see exhibits below).

North Korea's existing ballistic missiles and how far they can reach



Source: CSIS (reproduced under the permission of CSIS Missile Defense Project)

South Korea knows this all too well. It has already begun to deploy the US' Terminal High Altitude Area Defense (THAAD) system, a sophisticated anti-missile system to complement the existing Patriot and Aegis systems, despite the furious objections of China. The South must have weighed carefully the security risks of not building an adequate defence against the risks of economic losses as a result of antagonising China.

The US under Trump has quickly woken up to this reality. For the past 20 years or so, the US has tried and failed to stop North Korea's pursuit of nuclear weapons. Pyongyang has been offered various incentives and security guarantees on the one hand, and Washington has also tried sanctions, threats and isolation on the other. Nothing has worked. As a result, the US now faces the nightmare of a nuclear-armed North Korea that is threatening to use those weapons.

North Korea can probably already target South Korea, Japan, and US bases in those countries with nuclear-tipped ballistic missiles. And Pyongyang will likely be able to strike

more distant targets, including US bases in Guam and Hawaii, and eventually the continental US itself, within 2 or 3 years (or perhaps even less time).

North Korea's missile range

Missile Type	Class	Range	Status
KN-15 (Pukkuksong-2)	MRBM	1,200-2,000km	In development
Hwasong-5	SRBM	300km	Operational
Hwasong-6	SRBM	500km	Operational
Hwasong-7	SRBM	800-1,000km	Operational
KN-02	SRBM	120-170km	Operational
KN-11	SLBM	900km	In development
No-Dong	MRBM	1,200-1,500km	Operational
BM-25 Musudan	IRBM	2,500-4,000km	In development
Taepodong-1	IRBM	2,000-5,000km	Obsolete
KN-08	ICBM	5,500-11,500km	In development
KN-14	ICBM	8,000-10,000km	In development
Taepodong-2	ICBM/SLV	4,000-15,000km	Operational
KN-01	ASCM	160km	Operational

Source: CSIS (reproduced under the permission of CSIS Missile Defense Project)

When bluff turns into credible threat

The North's nuclear weapons serve as a means of survival for the regime

What is North Korea's motivation for developing nuclear weapons? For years, many believed that Pyongyang had been bluffing about nuclear weapons. The bluff was seen as a bargaining chip for external aid, concessions and security guarantees. But today, according to many international relations experts, its nuclear weapons serve as an important deterrent against the outside world. The North probably believes that the US will not strike a country that has nuclear weapons and is willing to use them.

This "*deterrence*" mechanism is similar to what happened during the Cold War, where France decided to build its own nuclear weapons in 1954. France was concerned that in the event of a Soviet invasion of Western Europe, the US –already bogged down in the war in Vietnam and afraid of Soviet retaliation against the US proper –would not come to the aid of its Allies in Western Europe. According to President de Gaulle, France should never trust its defence and therefore its very existence to a foreign and thus unreliable protector, the US. The rationale for this strategic mechanism is based on the capacity to inflict so much damage on a potential (and more powerful) adversary's population that the potential adversary will be deterred from attacking, no matter how much destruction it is capable of inflicting itself.

Six decades later, a similar challenge has emerged on the Korean Peninsula. Since the end of the Korean War in 1953, a US military presence has helped deter a North Korean attack on the South, while the communist North has kept the US at bay as well. Today, North Korea's nuclear weapons threaten to upset this delicate 60-year balance by giving its regime the capacity, through long-range ballistic missiles, to strike the West Coast of the US.

What if diplomatic options run out?

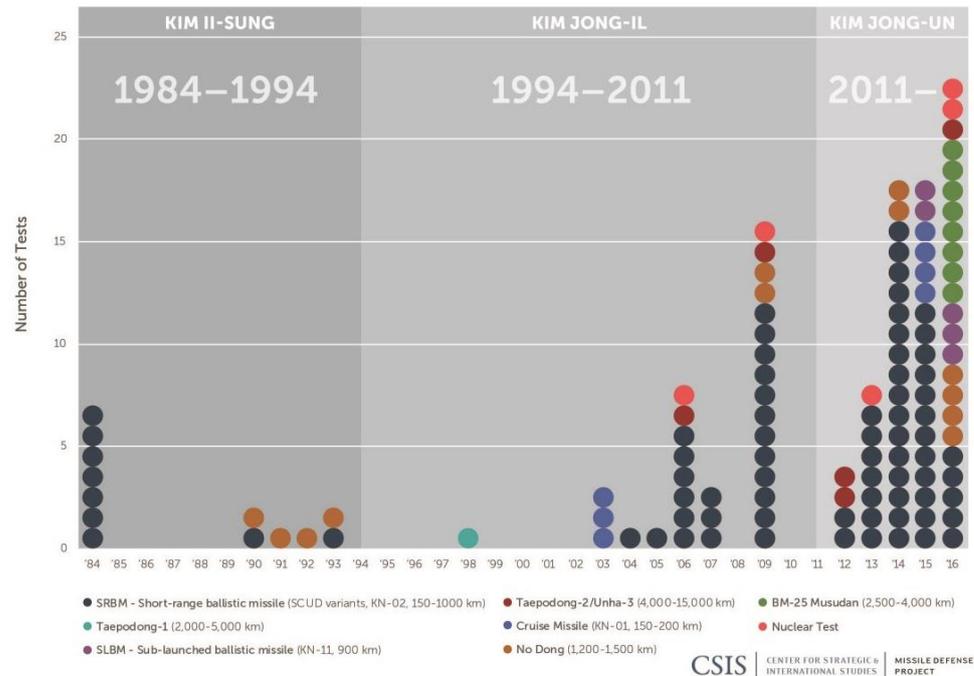
Best-case scenario: the US and the North engage in direct negotiations

Diplomacy remains the most desirable means to solve the issues with North Korea, in our view. For all concerned, the best-case scenario would be for the US to engage in direct negotiations with North Korea, with the help of China. The US side could bring forward a deal. North Korea would have to agree to terminate its nuclear and missile capabilities, along with providing access to international inspectors to ensure its compliance. In return, the US and its partners would offer an easing of sanctions and the provision of other incentives. Best of all, the US and others could agree to sign a long-term peace agreement with the North.

Again, there is no guarantee that diplomacy would succeed. To date, all diplomatic efforts to prevent North Korea's nuclear armament have failed. China's stance on North Korea is increasingly driven by a wide range of interests. In this context, China's leaders do not

necessarily see North Korea as a threat. Chinese leaders may not like the idea of a nuclear-armed North Korea, but nor do they like the idea of a collapse of North Korea, unification of the Korean Peninsula, and the prospect of a single Korea that is very close to the US. For this reason, China may think that it is better to keep a troublesome North Korean ally afloat than to risk the problems that might arise if the regime were to collapse.

North Korea's missile tests



Source: CSIS (reproduced under the permission of CSIS Missile Defense Project)

It is not certain that China may be able to help

In fact, we seriously doubt how much Beijing can exert its influence over the young and unruly Kim Jong-un. He has repeatedly defied Beijing. He has apparently purged or executed many senior leaders that were close to Beijing, including his uncle Jan Song-thaek. More recently, the alleged assassination of his half-brother Kim Jong-nam has antagonised Beijing, as for many years the elder brother was under the Chinese government's close protection. In the past few months, the North carried out ballistic missile tests that simulated an attack on a US base in Japan. Beijing has been unable to curb such behaviour. Nor has it stopped South Korea from starting to deploy THAAD. This is arguably the biggest foreign policy setback for President Xi Jinping. At home, he is facing pressure from many hawks, nationalists and Maoists who think that China must act tough in the face of a perceived "imperialist threat" from the US, South Korea and Japan. If Xi is perceived as bending to the needs of the "imperialists", it will not help him score at the coming 19th Communist Party Congress, which is still more than six months away.

The US under Trump will almost certainly try to exhaust all diplomatic and conventional options over the next few months. If these options fail again, the US and its allies will be under real pressure to consider a few highly unpleasant alternatives. Many international relations experts believe there are just three alternatives.

Option 1: leave it alone

If you can't fix it, leave it. The idea would be to "freeze" North Korea's nuclear programme "as is", either as a way to prevent the programme from expanding further or in the hope that a freeze might eventually lead to denuclearisation. South Korea and Japan are likely to reject this approach, but China would probably prefer this over the other two options.

Option 2: military pre-emption

In June 2006, William Perry and Ashton Carter, former US defence secretaries, argued in *The Washington Post* that if North Korea deployed on its territory a nuclear-armed missile capable of hitting the US, the US should attack and destroy it. And some in the Trump administration may view North Korea's pursuit of intercontinental missiles capable of reaching the West Coast as justification for a pre-emptive military strike.

In theory, the US and South Korea could take military action against North Korea, destroying its known nuclear, missile, and military infrastructure, including nuclear production and storage facilities. However, this strategy would still carry enormous risks. No-one can be sure that all of the North's weapons could be eliminated instantly. North Korea may well be able to launch a limited retaliation against South Korea, Japan and US bases in the region. And even a single launch could be catastrophic. This option would also likely lead to a full-scale peninsular war and chaos on China's northeast border.

Option 3: old-fashioned deterrence

During Trump's presidential campaign, in the face of an increasing nuclear threat from North Korea, he argued that South Korea and Japan should arm themselves with such weapons. On the other hand, if East Asian countries come to doubt the credibility of the US commitment and capability to their defence, they could build their own nuclear weapons. Japan, South Korea, and even Taiwan are almost certainly capable of doing so rapidly.

China would be very sensitive about a regional arms race, especially if Japan and Taiwan were involved. Such a development would severely limit China's military and geopolitical influence over the region. Earlier this month, Taiwan announced new plans to build eight submarines to bolster its current fleet of four ageing foreign-built vessels.

Economic implications under various scenarios

We see a 60% probability where the US and its partners may have to think about non-diplomatic solutions

The next 3-6 months will be critical, in our view. The US will continue to rely on diplomatic and conventional measures – but in a more proactive way. There will likely be tougher economic sanctions, further isolation and various incentives offered in order to bring Pyongyang to the negotiating table. And the hope is that China will play a constructive role in the process. We think the probability of achieving a diplomatic solution – the best-case scenario – is about 40%. Such a development would be the most favourable to all economies in the region, in our opinion.

South Korea's economy to suffer further

In the meantime, US-South Korea military exercises will most likely be accelerated. The THAAD deployment should also be accelerated. THAAD is designed to intercept a missile during its final, or descent, phase, as it hurtles toward its target. At that close range, a miss or series of misses could mean catastrophe, especially if there is a nuclear device on the missile's tip. Even more disturbing, THAAD has not been tested against the kind of long-range ballistic missiles in North Korea's arsenal.

The next natural step would be for the South to deploy a boost-phase intercept system

As such, the next natural step for South Korea would be to deploy a far more advanced and sophisticated boost-phase intercept (BPI) system, which allows targets to be hit more accurately at the early and ascent stage. China would almost certainly not be so pleased by this development, as THAAD has already led to aggressive economic boycotts of Korean goods and services by Chinese parties. The relationship between the two countries, already under enormous strain, would be put to a further test.

Deterrence seems more likely than pre-emption

If diplomatic means fail again in the next 3-6 months, we think investors should be prepared for the other three more unpleasant scenarios. Of these, we think Option 1 is the least likely. Exactly because the nuclear threat from North Korea is now real and legitimate, it doesn't make much sense for the US to leave things alone. Even if the US does not care,

South Korea and Japan do care. Hence, it would probably bring us to Option 3 anyway. In our view, the probability of a “leave-it-alone” scenario is just around 10%.

Military pre-emption is of course highly risky and potentially catastrophic

As we highlighted, Option 2 is the riskiest and most uncertain option. We still think, and remain hopeful, that it would not happen. But, statistically speaking, the probability of such a scenario looks to have risen considerably compared with a year ago. Our best guess is that there is a 20% chance of a massive military strike led by US forces on the Korean Peninsula.

A military pre-emption would almost be equivalent to another Korean War, in our view. One could imagine that the economic impact would be devastating. Pyongyang, Seoul and other parts of the two Koreas would potentially be subject to severe damage and human casualties. The impact could also reach the northeast borders of China. Even parts of Japan may be subject to missile attacks from North Korea.

Four endgame scenarios for the Korean Peninsula

Scenario	How could it happen?	Probability	Economic implications
1. Diplomatic solution	<ul style="list-style-type: none"> - The US engages in direct negotiations with North Korea, with the help of China. - North Korea would have to agree to terminate its nuclear and missile capabilities. - In return, the US would offer an easing of sanctions and provide other incentives. - Even better, the US and others could sign a long-term peace agreement with the North. 	40%	Most positive
2. Leave it alone	<ul style="list-style-type: none"> - The US and its partners tolerate North Korea's possession of nuclear weapons and hope that it never uses them. 	10%	Mildly negative, but regional security is highly uncertain
3. Military pre-emption	<ul style="list-style-type: none"> - The US and South Korea take massive military action against North Korea, destroying its known nuclear, missile, and military infrastructure. - As no-one can be sure that all weapons could be eliminated instantly, the North could still launch limited but devastating attacks against South Korea, Japan and US bases. - This option is almost equivalent to another full-scale peninsular war. 	20%	Devastating and certainly most negative
4. Old-fashioned deterrence	<ul style="list-style-type: none"> - The “deterrence” mechanism is similar to what happened during the Cold War. - The rationale is based on the capacity to inflict so much damage on a potential adversary's population that the potential adversary will be deterred from attacking, no matter how much destruction they themselves are capable of inflicting. - During Trump's presidential campaign, in face of increasing nuclear threat from North Korea, he argued that South Korea and Japan should arm themselves with such weapons. 	30%	Negative for a long-term economic perspective; Regional stability is maintained by a delicate and not exactly stable balance of power

Source: Daiwa

A race toward deterrence is still negative for regional economies

Deterrence may eventually be inevitable if military pre-emption is too risky

Almost by elimination, we think that old-fashioned deterrence is the most likely outcome if diplomacy fails, as it doesn't make sense to do nothing and it's far too risky to think about pre-emption. We estimate the probability of this scenario at 30%. While this is lower than the 40% we give to the diplomacy scenario, the probability of a pre-emption or deterrence is actually higher, at 50%.

A nuclear-armed East Asia is a completely new challenge and would threaten to change many things. The 70 post-WWII years have been extremely stable and peaceful, allowing regional economies to grow upon trust and mutual respect. China would feel highly uncomfortable with such a development, especially when Japan and even Taiwan might join the race to build nuclear weapons. China would almost certainly find itself more isolated. Its national policy, already highly nationalistic, could become even more nationalistic and isolationist. And such a development would surely run counter to the idea of opening up and pursuing market-based structural reforms.

An arm race threatens to change many things in the region

Many would argue also that, from a security perspective, a race to build nuclear weapons might not be a good idea for the region as a whole. The old-fashioned deterrence of the Cold War era may not work in the present time. No nuclear power in the region would have the capacity for “assured destruction” – that is, the ability to absorb a nuclear strike and still inflict devastating damage on the attacker. Without such a capacity, a small nuclear-armed country like North Korea may have a greater incentive to launch a first strike if it suspects that it will be attacked.

Time is running out. The US is losing patience on the issue of North Korea. South Korea and Japan are feeling up close a legitimate security threat. China is under the pressure to

take sides and play a more active role, which is as yet highly uncertain. The rest of the world is watching nervously.

We believe 2017 may well be the year in which key decisions are made and an entirely new approach is pursued on the Korean Peninsula, which means geopolitical risks in the region are probably the highest they have been since the end of the Korean War in 1953. Financial markets have almost certainly not priced in these risks.

Links to Daiwa's economic reports and notes

China Economy: So close, yet so far away	10-Apr-2017
Regional Economy: Treasury report preview: who will be the first currency manipulator?	27-Mar-2017
Hong Kong Economy: Carrie Lam's olive branch	27-Mar-2017
Korea Economy: THAAD: a litmus test for South Korea and China	8-Mar-2017
China Economy: Cautious economic targets; strong core leadership	6-Mar-2017
China Economy: 2017 NPC preview	24-Feb-2017
Hong Kong Economy: 2017/18 budget and 4Q16 GDP results	22-Feb-2017
China Economy: Does higher inflation warrant policy attention?	14-Feb-2017
China Economy: 4Q16 GDP and our summarised views for 2017	20-Jan-2017
Hong Kong Economy: Policy address and chief executive race	18-Jan-2017
China Economy: December's trade and additional capital controls	13-Jan-2017
China Economy: The problem with being slow and orderly	6-Jan-2017
2017 Macro Outlook: New protectionism and other challenges	3-Jan-2017
Regional Economy: Dollar breakout	18-Nov-2016
China Economy: 6.82 gives way, as US yields and the DXY keep rising	14-Nov-2016
China Economy: President Trump: what now for China?	9-Nov-2016
China Economy: October's trade performance and FX reserves	8-Nov-2016
China Economy: New MOF chief; 3Q16 balance of payments	7-Nov-2016
China Economy: Is 6.82 going to be a support?	28-Oct-2016
China Economy: September trade numbers, CNY breakout and US election	13-Oct-2016
China Economy: Hillary and China	6-Oct-2016
China Economy: Implications of official SDR membership	21-Sep-2016
Hong Kong Economy: Record turnout at Sunday's Legco election and the implications: political winds of change are blowing	5-Sep-2016
Regional Economy: Messages from Jackson Hole	29-Aug-2016
China Economy: G20 summit: the usual contradictory wish-list on China	24-Aug-2016
China Economy: Mythbusters: the facts vs. 7 widely held views	7-Jul-2016
China Economy: CNY breakout and Brexit	27-Jun-2016
China Economy: Uninspiring data, FOMC verdict and potential CNY breakout	16-Jun-2016
China Economy: Lower FX reserves despite sizeable trade surplus	8-Jun-2016
China Economy: Round two begins	24-May-2016
Hong Kong Economy: Recession call	16-May-2016
China Economy: Taking the mysterious person seriously	16-May-2016
China Economy: One door gets shut; money goes to another door	9-May-2016
China Economy: Glass more empty than full	22-Apr-2016
Hong Kong Economy: The ghost of 1997-98	6-Apr-2016
China Economy: Economic targets and conflicting policy goals	7-Mar-2016
China Economy: Muddle-through policies and unpleasant outcomes	1-Mar-2016
China Economy: 2016 NPC preview	26-Feb-2016
Hong Kong Economy: 2016/17 budget and 4Q15 GDP results	24-Feb-2016
China Economy: Monetary policy 2-way risks	3-Feb-2016
Hong Kong Economy: Brace for impact	18-Jan-2016
Hong Kong Economy: Retail sales: the long cold winter	5-Jan-2016
China Economy: Snow-ball effect	4-Jan-2016
China Economy: 2016 Central Economic Work Conference	22-Dec-2015
China Economy: Launch of the CNY Index is a green light for further depreciation	14-Dec-2015
2016 Macro Outlook: Will this receding tide beach all boats?	7-Dec-2015
China Economy: SDR approval and November PMIs	1-Dec-2015
China Economy: Why SDR inclusion is going to be a non-event?	18-Nov-2015
China Economy: Abolishing one-child policy and new Five-year Plan	30-Oct-2015
China Economy: Crowded entry, jammed exit	9-Sep-2015
China Economy: More easing, more currency pressure	26-Aug-2015
Taiwan Economy: Cutting our 2015 GDP forecast	17-Aug-2015
Hong Kong Economy: Will the peg come under pressure?	14-Aug-2015
China Economy: So the CNY goes; what next?	11-Aug-2015
China Economy: Illusion, panic, violence and chaos	8-Jul-2015
China Economy: Chasing a running target	29-Jun-2015
China Economy: Fighting a liquidity trap	25-Jun-2015
Regional economy: Stress test for emerging Asia	16-Jun-2015
China Economy: Worsening balance-of-payments deficit	15-May-2015
China Economy: Combatting the USD strength	6-May-2015
China Economy: 2015 NPC: the new normal	5-Mar-2015
Hong Kong Economy: Retail sales off to a poor start	3-Mar-2015
China Economy: Acceleration in outflows and currency pressure	4-Feb-2015
Regional Economy: Taking the punchbowl away	6-Jan-2015
China: Money outflows, policy constraints, currency pressure	27-Oct-2014
China: The socialist rule of law with Chinese characteristics	24-Oct-2014
Hong Kong: Occupy Central: the stakes are high and options are few	3-Oct-2014
Hong Kong: Dollar strength, outflows and media overhype	26-Sep-2014
China: Is the PBOC easing more aggressively?	22-Sep-2014
China: A false dawn	15-Sep-2014

Daiwa's Asia Pacific Research Directory

HONG KONG		
Takashi FUJIKURA	(852) 2848 4051	takashi.fujikura@hk.daiwacm.com
<i>Regional Research Head</i>		
Jiro IOKIBE	(852) 2773 8702	jiro.iokibe@hk.daiwacm.com
<i>Co-head of Asia Pacific Research</i>		
John HETHERINGTON	(852) 2773 8787	john.hetherington@hk.daiwacm.com
<i>Co-head of Asia Pacific Research</i>		
Rohan DALZIELL	(852) 2848 4938	rohan.dalziell@hk.daiwacm.com
<i>Regional Head of Asia Pacific Product Management</i>		
Kevin LAI	(852) 2848 4926	kevin.lai@hk.daiwacm.com
<i>Chief Economist for Asia ex-Japan; Macro Economics (Regional)</i>		
Olivia XIA	(852) 2773 8736	olivia.xia@hk.daiwacm.com
<i>Macro Economics (Hong Kong/China)</i>		
Kelvin LAU	(852) 2848 4467	kelvin.lau@hk.daiwacm.com
<i>Head of Automobiles; Transportation and Industrial (Hong Kong/China)</i>		
Leon QI	(852) 2532 4381	leon.qi@hk.daiwacm.com
<i>Banking; Diversified financials; Insurance (Hong Kong/China)</i>		
Yan LI	(852) 2773 8822	yan.li@hk.daiwacm.com
<i>Banking (China)</i>		
Anson CHAN	(852) 2532 4350	anson.chan@hk.daiwacm.com
<i>Consumer (Hong Kong/China)</i>		
Adrian CHAN	(852) 2848 4427	adrian.chan@hk.daiwacm.com
<i>Consumer (Hong Kong/China)</i>		
Jamie SOO	(852) 2773 8529	jamie.soo@hk.daiwacm.com
<i>Gaming and Leisure (Hong Kong/China)</i>		
John CHOI	(852) 2773 8730	john.choi@hk.daiwacm.com
<i>Head of Hong Kong and China Internet; Regional Head of Small/Mid Cap</i>		
Alex LIU	(852) 2848 4976	alex.liu@hk.daiwacm.com
<i>Internet (Hong Kong/China)</i>		
Carlton LAI	(852) 2532 4349	carlton.lai@hk.daiwacm.com
<i>Small/Mid Cap (Hong Kong/China)</i>		
Dennis IP	(852) 2848 4068	dennis.ip@hk.daiwacm.com
<i>Power; Utilities; Renewables and Environment (Hong Kong/China)</i>		
Jonas KAN	(852) 2848 4439	jonas.kan@hk.daiwacm.com
<i>Head of Hong Kong and China Property</i>		
Cynthia CHAN	(852) 2773 8243	cynthia.chan@hk.daiwacm.com
<i>Property (China)</i>		
Thomas HO	(852) 2773 8716	thomas.ho@hk.daiwacm.com
<i>Custom Products Group</i>		
PHILIPPINES		
Micaela ABAQUITA	(63) 2 737 3021	micaela.abaquita@dbpdaiwacm.com.ph
<i>Property</i>		

SOUTH KOREA		
Sung Yop CHUNG	(82) 2 787 9157	sychung@kr.daiwacm.com
<i>Pan-Asia Co-head/Regional Head of Automobiles and Components; Automobiles; Shipbuilding; Steel</i>		
Mike OH	(82) 2 787 9179	mike.oh@kr.daiwacm.com
<i>Banking; Capital Goods (Construction and Machinery)</i>		
Iris PARK	(82) 2 787 9165	iris.park@kr.daiwacm.com
<i>Consumer/Retail</i>		
SK KIM	(82) 2 787 9173	sk.kim@kr.daiwacm.com
<i>IT/Electronics – Semiconductor/Display and Tech Hardware</i>		
Thomas Y KWON	(82) 2 787 9181	yskwon@kr.daiwacm.com
<i>Pan-Asia Head of Internet & Telecommunications; Software – Internet/On-line Games</i>		
Kevin JIN	(82) 2 787 9168	kevin.jin@kr.daiwacm.com
<i>Small/Mid Cap</i>		
TAIWAN		
Rick HSU	(886) 2 8758 6261	rick.hsu@daiwacm-cathay.com.tw
<i>Head of Regional Technology; Head of Taiwan Research; Semiconductor/IC Design (Regional)</i>		
Steven TSENG	(886) 2 8758 6252	steven.tseng@daiwacm-cathay.com.tw
<i>IT/Technology Hardware (PC Hardware)</i>		
Kylie HUANG	(886) 2 8758 6248	kylie.huang@daiwacm-cathay.com.tw
<i>IT/Technology Hardware (Handsets and Components)</i>		
Helen CHIEN	(886) 2 8758 6254	helen.chien@daiwacm-cathay.com.tw
<i>Small/Mid Cap</i>		
INDIA		
Punit SRIVASTAVA	(91) 22 6622 1013	punit.srivastava@in.daiwacm.com
<i>Head of India Research; Strategy; Banking/Finance</i>		
Saurabh MEHTA	(91) 22 6622 1009	saurabh.mehta@in.daiwacm.com
<i>Capital Goods; Utilities</i>		
SINGAPORE		
Ramakrishna MARUVADA	(65) 6499 6543	ramakrishna.maruvada@sg.daiwacm.com
<i>Head of Singapore Research; Telecommunications (China/ASEAN/India)</i>		
David LUM	(65) 6329 2102	david.lum@sg.daiwacm.com
<i>Banking; Property and REITs</i>		
Royston TAN	(65) 6321 3086	royston.tan@sg.daiwacm.com
<i>Oil and Gas; Capital Goods</i>		
Shane GOH	(65) 64996546	shane.goh@sg.daiwacm.com
<i>Property and REITs; Small/Mid Cap (Singapore)</i>		
Jame OSMAN	(65) 6321 3092	jame.osman@sg.daiwacm.com
<i>Transportation – Road and Rail; Pharmaceuticals and Healthcare; Consumer (Singapore)</i>		

Daiwa's Offices

Office / Branch / Affiliate	Address	Tel	Fax
DAIWA SECURITIES GROUP INC			
HEAD OFFICE			
	Gran Tokyo North Tower, 1-9-1, Marunouchi, Chiyoda-ku, Tokyo, 100-6753	(81) 3 5555 3111	(81) 3 5555 0661
Daiwa Securities Trust Company	One Evertrust Plaza, Jersey City, NJ 07302, U.S.A.	(1) 201 333 7300	(1) 201 333 7726
Daiwa Securities Trust and Banking (Europe) PLC (Head Office)	5 King William Street, London EC4N 7JB, United Kingdom	(44) 207 320 8000	(44) 207 410 0129
Daiwa Europe Trustees (Ireland) Ltd	Level 3, Block 5, Harcourt Centre, Harcourt Road, Dublin 2, Ireland	(353) 1 603 9900	(353) 1 478 3469
DAIWA CAPITAL MARKETS			
Daiwa Capital Markets America Inc. New York Head Office	Financial Square, 32 Old Slip, New York, NY10005, U.S.A.	(1) 212 612 7000	(1) 212 612 7100
Daiwa Capital Markets America Inc. San Francisco Branch	555 California Street, Suite 3360, San Francisco, CA 94104, U.S.A.	(1) 415 955 8100	(1) 415 956 1935
Daiwa Capital Markets Europe Limited, London Head Office	5 King William Street, London EC4N 7AX, United Kingdom	(44) 20 7597 8000	(44) 20 7597 8600
Daiwa Capital Markets Europe Limited, Frankfurt Branch	Neue Mainzer Str. 1, 60311 Frankfurt/Main, Germany	(49) 69 717 080	(49) 69 723 340
Daiwa Capital Markets Europe Limited, Paris Representative Office	17, rue de Surène 75008 Paris, France	(33) 1 56 262 200	(33) 1 47 550 808
Daiwa Capital Markets Europe Limited, Geneva Branch	50 rue du Rhône, P.O.Box 3198, 1211 Geneva 3, Switzerland	(41) 22 818 7400	(41) 22 818 7441
Daiwa Capital Markets Europe Limited, Moscow Representative Office	Midland Plaza 7th Floor, 10 Arbat Street, Moscow 119002, Russian Federation	(7) 495 641 3416	(7) 495 775 6238
Daiwa Capital Markets Europe Limited, Bahrain Branch	7th Floor, The Tower, Bahrain Commercial Complex, P.O. Box 30069, Manama, Bahrain	(973) 17 534 452	(973) 17 535 113
Daiwa Capital Markets Hong Kong Limited	Level 28, One Pacific Place, 88 Queensway, Hong Kong	(852) 2525 0121	(852) 2845 1621
Daiwa Capital Markets Singapore Limited	6 Shenton Way #26-08, OUE Downtown 2, Singapore 068809, Republic of Singapore	(65) 6220 3666	(65) 6223 6198
Daiwa Capital Markets Australia Limited	Level 34, Rialto North Tower, 525 Collins Street, Melbourne, Victoria 3000, Australia	(61) 3 9916 1300	(61) 3 9916 1330
DBP-Daiwa Capital Markets Philippines, Inc	18th Floor, Citibank Tower, 8741 Paseo de Roxas, Salcedo Village, Makati City, Republic of the Philippines	(632) 813 7344	(632) 848 0105
Daiwa-Cathay Capital Markets Co Ltd	14/F, 200, Keelung Road, Sec 1, Taipei, Taiwan, R.O.C.	(886) 2 2723 9698	(886) 2 2345 3638
Daiwa Securities Capital Markets Korea Co., Ltd.	20 Fl.& 21Fl. One IFC, 10 Gukjegeumyung-Ro, Yeongdeungpo-gu, Seoul, Korea	(82) 2 787 9100	(82) 2 787 9191
Daiwa Securities Co. Ltd., Beijing Representative Office	Room 301/302, Kerry Center, 1 Guanghua Road, Chaoyang District, Beijing 100020, People's Republic of China	(86) 10 6500 6688	(86) 10 6500 3594
Daiwa (Shanghai) Corporate Strategic Advisory Co. Ltd.	44/F, Hang Seng Bank Tower, 1000 Lujiazui Ring Road, Pudong, Shanghai China 200120, People's Republic of China	(86) 21 3858 2000	(86) 21 3858 2111
Daiwa Securities Co. Ltd., Bangkok Representative Office	18 th Floor, M Thai Tower, All Seasons Place, 87 Wireless Road, Lumpini, Pathumwan, Bangkok 10330, Thailand	(66) 2 252 5650	(66) 2 252 5665
Daiwa Capital Markets India Private Ltd	10th Floor, 3 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra East, Mumbai – 400051, India	(91) 22 6622 1000	(91) 22 6622 1019
Daiwa Securities Co. Ltd., Hanoi Representative Office	Suite 405, Pacific Palace Building, 83B, Ly Thuong Kiet Street, Hoan Kiem Dist. Hanoi, Vietnam	(84) 4 3946 0460	(84) 4 3946 0461
DAIWA INSTITUTE OF RESEARCH LTD			
HEAD OFFICE			
	15-6, Fuyuki, Koto-ku, Tokyo, 135-8460, Japan	(81) 3 5620 5100	(81) 3 5620 5603
MARUNOUCHI OFFICE			
	Gran Tokyo North Tower, 1-9-1, Marunouchi, Chiyoda-ku, Tokyo, 100-6756	(81) 3 5555 7011	(81) 3 5202 2021
New York Research Center	11th Floor, Financial Square, 32 Old Slip, NY, NY 10005-3504, U.S.A.	(1) 212 612 6100	(1) 212 612 8417
London Research Centre	3/F, 5 King William Street, London, EC4N 7AX, United Kingdom	(44) 207 597 8000	(44) 207 597 8550

Important Disclosures and Disclaimer

This publication is produced by Daiwa Securities Group Inc. and/or its non-U.S. affiliates, and distributed by Daiwa Securities Group Inc. and/or its non-U.S. affiliates, except to the extent expressly provided herein. This publication and the contents hereof are intended for information purposes only, and may be subject to change without further notice. Any use, disclosure, distribution, dissemination, copying, printing or reliance on this publication for any other purpose without our prior consent or approval is strictly prohibited. Neither Daiwa Securities Group Inc. nor any of its respective parent, holding, subsidiaries or affiliates, nor any of its respective directors, officers, servants and employees, represent nor warrant the accuracy or completeness of the information contained herein or as to the existence of other facts which might be significant, and will not accept any responsibility or liability whatsoever for any use of or reliance upon this publication or any of the contents hereof. Neither this publication, nor any content hereof, constitute, or are to be construed as, an offer or solicitation of an offer to buy or sell any of the securities or investments mentioned herein in any country or jurisdiction nor, unless expressly provided, any recommendation or investment opinion or advice. Any view, recommendation, opinion or advice expressed in this publication may not necessarily reflect those of Daiwa Securities Group Inc., and/or its affiliates nor any of its respective directors, officers, servants and employees except where the publication states otherwise. This research report is not to be relied upon by any person in making any investment decision or otherwise advising with respect to, or dealing in, the securities mentioned, as it does not take into account the specific investment objectives, financial situation and particular needs of any person.

Daiwa Securities Group Inc., its subsidiaries or affiliates, or its or their respective directors, officers and employees from time to time have trades as principals, or have positions in, or have other interests in the securities of the company under research including market making activities, derivatives in respect of such securities or may have also performed investment banking and other services for the issuer of such securities. The following are additional disclosures.

Ownership of Securities

For "Ownership of Securities" information, please visit BlueMatrix disclosure link at <https://daiwa3.bluematrix.com/sellside/Disclosures.action>.

Investment Banking Relationship

For "Investment Banking Relationship", please visit BlueMatrix disclosure link at <https://daiwa3.bluematrix.com/sellside/Disclosures.action>.

Japan

Daiwa Securities Co. Ltd. and Daiwa Securities Group Inc.

Daiwa Securities Co. Ltd. is a subsidiary of Daiwa Securities Group Inc.

Investment Banking Relationship

Within the preceding 12 months, the subsidiaries and/or affiliates of Daiwa Securities Group Inc. * has lead-managed public offerings and/or secondary offerings (excluding straight bonds) of the securities of the following companies: Neo Solar Power Corp (3576 TT), Acushnet Holdings Corp (GOLF US), No Va Land Investment Group Corporation (NVL VN).

*Subsidiaries of Daiwa Securities Group Inc. for the purposes of this section shall mean any one or more of: Daiwa Capital Markets Hong Kong Limited (大和資本市場香港有限公司), Daiwa Capital Markets Singapore Limited, Daiwa Capital Markets Australia Limited, Daiwa Capital Markets India Private Limited, Daiwa-Cathay Capital Markets Co., Ltd., Daiwa Securities Capital Markets Korea Co., Ltd.

Hong Kong

This research is distributed in Hong Kong by Daiwa Capital Markets Hong Kong Limited (大和資本市場香港有限公司) ("DHK") which is regulated by the Hong Kong Securities and Futures Commission. Recipients of this research in Hong Kong may contact DHK in respect of any matter arising from or in connection with this research.

Relevant Relationship (DHK)

DHK may from time to time have an individual employed by or associated with it serves as an officer of any of the companies under its research coverage.

Singapore

This research is distributed in Singapore by Daiwa Capital Markets Singapore Limited and it may only be distributed in Singapore to accredited investors, expert investors and institutional investors as defined in the Financial Advisers Regulations and the Securities and Futures Act (Chapter 289), as amended from time to time. By virtue of distribution to these category of investors, Daiwa Capital Markets Singapore Limited and its representatives are not required to comply with Section 36 of the Financial Advisers Act (Chapter 110) (Section 36 relates to disclosure of Daiwa Capital Markets Singapore Limited's interest and/or its representative's interest in securities). Recipients of this research in Singapore may contact Daiwa Capital Markets Singapore Limited in respect of any matter arising from or in connection with the research.

Australia

This research is distributed in Australia by Daiwa Capital Markets Australia Limited and it may only be distributed in Australia to wholesale investors within the meaning of the Corporations Act. Recipients of this research in Australia may contact Daiwa Capital Markets Stockbroking Limited in respect of any matter arising from or in connection with the research.

India

This research is distributed in India to Institutional Clients only by Daiwa Capital Markets India Private Limited (Daiwa India) which is an intermediary registered with Securities & Exchange Board of India as a Stock Broker, Merchant Bank and Research Analyst. Daiwa India, its Research Analyst and their family members and its associates do not have any financial interest save as disclosed or other undisclosed material conflict of interest in the securities or derivatives of any companies under coverage. Daiwa India and its associates, may have received compensation for any products other than Investment Banking (as disclosed) or brokerage services from the subject company in this report or from any third party during the past 12 months. Daiwa India and its associates may have debt holdings in the subject company. For information on ownership of equity, please visit BlueMatrix disclosure Link at <https://daiwa3.bluematrix.com/sellside/Disclosures.action>.

There is no material disciplinary action against Daiwa India by any regulatory authority impacting equity research analysis activities as of the date of this report.

Associates of Daiwa India, registered with Indian regulators, include Daiwa Capital Markets Singapore Limited and Daiwa Portfolio Advisory (India) Private Limited.

Taiwan

This research is solely for reference and not intended to provide tailored investment recommendations. This research is distributed in Taiwan by Daiwa-Cathay Capital Markets Co., Ltd. and it may only be distributed in Taiwan to specific customers who have signed recommendation contracts with Daiwa-Cathay Capital Markets Co., Ltd. and non-customers including (i) professional institutional investors, (ii) TWSE or TPEX listed companies, upstream and downstream vendors, and specialists that offer or seek advice, and (iii) potential customers with an actual need for business development in accordance with the Operational Regulations Governing Securities Firms Recommending Trades in Securities to Customers. Recipients of this research including non-customer recipients of this research shall not provide it to others or engage in any activities in connection with this research which may involve conflicts of interests. Neither Daiwa-Cathay Capital Markets Co., Ltd. nor its personnel who writes or reviews the research report has any conflict of interest in this research. Since Daiwa-Cathay Capital Markets Co., Ltd. does not operate brokerage trading business in foreign markets, **this research is "without recommendation" to any foreign securities** and Daiwa-Cathay Capital Markets Co., Ltd. does not accept orders from customers to trade in such securities that are without recommendation. Recipients of this research in Taiwan may contact Daiwa-Cathay Capital Markets Co., Ltd. in respect of any matter arising from or in connection with the research.

Philippines

This research is distributed in the Philippines by DBP-Daiwa Capital Markets Philippines, Inc. which is regulated by the Philippines Securities and Exchange Commission and the Philippines Stock Exchange, Inc. Recipients of this research in the Philippines may contact DBP-Daiwa Capital Markets Philippines, Inc. in respect of any matter arising from or in connection with the research. DBP-Daiwa Capital Markets Philippines, Inc. recommends that investors independently assess, with a professional advisor, the specific financial risks as well as the legal, regulatory, tax, accounting, and other consequences of a proposed transaction. DBP-Daiwa Capital Markets Philippines, Inc. may have positions or may be materially interested in the securities in any of the markets mentioned in the publication or may have performed other services for the issuers of such securities.

For relevant securities and trading rules please visit SEC and PSE links at <http://www.sec.gov.ph> and <http://www.pse.com.ph/> respectively.

Thailand

This research is distributed to only institutional investors in Thailand primarily by Thanachart Securities Public Company Limited ("TNS").

This report is prepared by analysts who are employed by Daiwa Securities Group Inc. and/or its non-U.S. affiliates. This report is provided to you for informational purposes only and it is not, and is not to be construed as, an offer or an invitation to make an offer to sell or buy any securities. Neither Thanachart Securities Public Company Limited, Daiwa Securities Group Inc. nor any of their respective parent, holding, subsidiaries or affiliates, nor any of their respective directors, officers, servants and employees accept any liability whatsoever for any direct or consequential loss arising from any use of this research or its contents.

The information and opinions contained herein have been compiled or arrived at from sources believed to be reliable. However, Thanachart Securities Public Company Limited, Daiwa Securities Group Inc. nor any of their respective parent, holding, subsidiaries or affiliates, nor any of their respective directors, officers, servants and employees make no representation or warranty, express or implied, as to their accuracy or completeness. Expressions of opinion herein are subject to change without notice. The use of any information, forecasts and opinions contained in this report shall be at the sole discretion and risk of the user.

Daiwa Securities Group Inc. and/or its non-U.S. affiliates perform and seek to perform business with companies covered in this research. Thanachart Securities Public Company Limited, Daiwa Securities Group Inc., their respective parent, holding, subsidiaries or affiliates, their respective directors, officers, servants and employees may have positions and financial interest in securities mentioned in this research. Thanachart Securities Public Company Limited, Daiwa Securities Group Inc., their respective parent, holding, subsidiaries or affiliates may from time to time perform investment banking or other services for, or solicit investment banking or other business from, any entity mentioned in this research. Therefore, investors should be aware of conflict of interest that may affect the objectivity of this research.

United Kingdom

This research report is produced by Daiwa Securities Co. Ltd. and/or its affiliates and is distributed in the European Union, Iceland, Liechtenstein, Norway and Switzerland. Daiwa Capital Markets Europe Limited is authorised and regulated by The Financial Conduct Authority ("FCA") and is a member of the London Stock Exchange and Eurex. This publication is intended for investors who are not Retail Clients in the United Kingdom within the meaning of the Rules of the FCA and should not therefore be distributed to such Retail Clients in the United Kingdom.

Kingdom. Should you enter into investment business with Daiwa Capital Markets Europe's affiliates outside the United Kingdom, we are obliged to advise that the protection afforded by the United Kingdom regulatory system may not apply; in particular, the benefits of the Financial Services Compensation Scheme may not be available.

Daiwa Capital Markets Europe Limited has in place organisational arrangements for the prevention and avoidance of conflicts of interest. Our conflict management policy is available at <http://www.uk.daiwacm.com/about-us/corporate-governance-regulatory>.

Germany

This document is distributed in Germany by Daiwa Capital Markets Europe Limited, Niederlassung Frankfurt which is regulated by BaFin (Bundesanstalt fuer Finanzdienstleistungsaufsicht) for the conduct of business in Germany.

Bahrain

This research material is distributed in Bahrain by Daiwa Capital Markets Europe Limited, Bahrain Branch, regulated by The Central Bank of Bahrain and holds Investment Business Firm – Category 2 license and having its official place of business at the Bahrain World Trade Centre, South Tower, 7th floor, P.O. Box 30069, Manama, Kingdom of Bahrain. Tel No. +973 17534452 Fax No. +973 535113

United States

This report is distributed in the U.S. by Daiwa Capital Markets America Inc. (DCMA). It may not be accurate or complete and should not be relied upon as such. It reflects the preparer's views at the time of its preparation, but may not reflect events occurring after its preparation; nor does it reflect DCMA's views at any time. Neither DCMA nor the preparer has any obligation to update this report or to continue to prepare research on this subject. This report is not an offer to sell or the solicitation of any offer to buy securities. Unless this report says otherwise, any recommendation it makes is risky and appropriate only for sophisticated speculative investors able to incur significant losses. Readers should consult their financial advisors to determine whether any such recommendation is consistent with their own investment objectives, financial situation and needs. This report does not recommend to U.S. recipients the use of any of DCMA's non-U.S. affiliates to effect trades in any security and is not supplied with any understanding that U.S. recipients of this report will direct commission business to such non-U.S. entities. Unless applicable law permits otherwise, non-U.S. customers wishing to effect a transaction in any securities referenced in this material should contact a Daiwa entity in their local jurisdiction. Most countries throughout the world have their own laws regulating the types of securities and other investment products which may be offered to their residents, as well as a process for doing so. As a result, the securities discussed in this report may not be eligible for sales in some jurisdictions. Customers wishing to obtain further information about this report should contact DCMA: Daiwa Capital Markets America Inc., Financial Square, 32 Old Slip, New York, New York 10005 (Tel no. 212-612-7000).

Ownership of Securities

For "Ownership of Securities" information please visit BlueMatrix disclosure link at <https://daiwa3.bluematrix.com/sellside/Disclosures.action>.

Investment Banking Relationships

For "Investment Banking Relationships" please visit BlueMatrix disclosure link at <https://daiwa3.bluematrix.com/sellside/Disclosures.action>.

DCMA Market Making

For "DCMA Market Making" please visit BlueMatrix disclosure link at <https://daiwa3.bluematrix.com/sellside/Disclosures.action>.

Research Analyst Conflicts

For updates on "Research Analyst Conflicts" please visit BlueMatrix disclosure link at <https://daiwa3.bluematrix.com/sellside/Disclosures.action>. The principal research analysts who prepared this report have no financial interest in securities of the issuers covered in the report, are not (nor are any members of their household) an officer, director or advisory board member of the issuer(s) covered in the report, and are not aware of any material relevant conflict of interest involving the analyst or DCMA, and did not receive any compensation from the issuer during the past 12 months except as noted: no exceptions.

Research Analyst Certification

For updates on "Research Analyst Certification" and "Rating System" please visit BlueMatrix disclosure link at <https://daiwa3.bluematrix.com/sellside/Disclosures.action>. The views about any and all of the subject securities and issuers expressed in this Research Report accurately reflect the personal views of the research analyst(s) primarily responsible for this report (or the views of the firm producing the report if no individual analyst is named on the report); and no part of the compensation of such analyst (or no part of the compensation of the firm if no individual analyst is named on the report) was, is, or will be directly or indirectly related to the specific recommendations or views contained in this Research Report.

The following explains the rating system in the report as compared to relevant local indices, unless otherwise stated, based on the beliefs of the author of the report.

- "1": the security could outperform the local index by more than 15% over the next 12 months.
- "2": the security is expected to outperform the local index by 5-15% over the next 12 months.
- "3": the security is expected to perform within 5% of the local index (better or worse) over the next 12 months.
- "4": the security is expected to underperform the local index by 5-15% over the next 12 months.
- "5": the security could underperform the local index by more than 15% over the next 12 months.

Disclosure of investment ratings

Rating	Percentage of total
Buy*	66.8%
Hold**	20.9%
Sell***	12.2%

Source: Daiwa

Notes: data is for single-branded Daiwa research in Asia (ex Japan) and correct as of 31 March 2017.

* comprised of Daiwa's Buy and Outperform ratings.

** comprised of Daiwa's Hold ratings.

*** comprised of Daiwa's Underperform and Sell ratings.

Additional information may be available upon request.

Japan - additional notification items pursuant to Article 37 of the Financial Instruments and Exchange Law

(This Notification is only applicable where report is distributed by Daiwa Securities Co. Ltd.)

If you decide to enter into a business arrangement with us based on the information described in materials presented along with this document, we ask you to pay close attention to the following items.

- In addition to the purchase price of a financial instrument, we will collect a trading commission* for each transaction as agreed beforehand with you. Since commissions may be included in the purchase price or may not be charged for certain transactions, we recommend that you confirm the commission for each transaction.
- In some cases, we may also charge a maximum of ¥ 2 million (including tax) per year as a standing proxy fee for our deposit of your securities, if you are a non-resident of Japan.
- For derivative and margin transactions etc., we may require collateral or margin requirements in accordance with an agreement made beforehand with you. Ordinarily in such cases, the amount of the transaction will be in excess of the required collateral or margin requirements.
- There is a risk that you will incur losses on your transactions due to changes in the market price of financial instruments based on fluctuations in interest rates, exchange rates, stock prices, real estate prices, commodity prices, and others. In addition, depending on the content of the transaction, the loss could exceed the amount of the collateral or margin requirements.
- There may be a difference between bid price etc. and ask price etc. of OTC derivatives handled by us.
- Before engaging in any trading, please thoroughly confirm accounting and tax treatments regarding your trading in financial instruments with such experts as certified public accountants. *The amount of the trading commission cannot be stated here in advance because it will be determined between our company and you based on current market conditions and the content of each transaction etc.

When making an actual transaction, please be sure to carefully read the materials presented to you prior to the execution of agreement, and to take responsibility for your own decisions regarding the signing of the agreement with us.

Corporate Name: Daiwa Securities Co. Ltd.
 Financial instruments firm: chief of Kanto Local Finance Bureau (Kin-sho) No.108
 Memberships: Japan Securities Dealers Association, The Financial Futures Association of Japan
 Japan Securities Investment Advisers Association
 Type II Financial Instruments Firms Association