## LOWY INSTITUTE ASIA POWER INDEX





#### ECONOMIC RESOURCES

Sub-measure	Indicator	Technical description
Size	GDP	GDP at purchasing power parity, current prices (2016); IMF WEO, October 2017
International leverage	Corporate giants	Number of public companies listed in the Forbes 2000 (2017); Forbes 2000
	Reserve currency	World currency composition of official foreign exchange reserves, annualised average (2016–17); IMF
	International currency share	Share of international financial transactions undertaken in national currency, annualised average (2017); SWIFT
	Official reserves	Official reserve assets including gold, current dollars (2016); World Bank, Reuters, CIA World Factbook
	Export credit agencies	Export credit agencies, total assets, current dollars (2016); Lowy Institute
	Sovereign wealth funds	Sovereign wealth funds, total assets, current dollars (2018); SWFI
Technology	High-tech exports	Estimated technological sophistication of exports, EXPY (2016); World Integrated Trade Solution, Lowy Institute
	Productivity	GDP per worker at purchasing power parity, constant 2011 prices (2017); ILO
	Human resources in R&D	Total R&D researchers, full-time equivalent (latest year available); UNESCO, Taiwan Statistical Data Book, ASTI, Lowy Institute
	R&D spending (% of GDP)	Gross domestic expenditure on R&D as a share of GDP (latest year available); UNESCO, Taiwan Statistical Data Book, ASTI, Lowy Institute
	Nobel prizes (sciences)	High achievements in physics, chemistry, and physiology or medicine (1990–2017); NobelPrize.org
	Supercomputers	Number of supercomputers (2017); Top 500.org
	Satellites launched since 2014	Satellites by country of ownership or operation launched (2014–17); UCS Satellite Database
	Carbon intensity	Kilograms of CO2 emissions per US\$ of GDP, current dollars (2014); CDIAC, World Bank, Taiwan Statistical Data Book
Connectivity	Global exports	Exports of goods and services, current dollars (2016); World Bank, CIA World Factbook
	Global imports	Imports of goods and services, current dollars (2016); World Bank, CIA World Factbook
	Global investment outflows (%)	Foreign direct investment, 3-year average share of global foreign investment outflows (2014–16); UNCTAL
	Global investment inflows (%)	Foreign direct investment, 3-year average share of global foreign investment inflows (2014–16); UNCTAD
	Merchant fleet	Total fleet, dead-weight tons (2017); UNCTAD
	Travel hub: International airlines	Number of international airlines flying into principal airport hub (2017); Lowy Institute

## MILITARY CAPABILITY

Sub-measure	Indicator	Technical description
Defence spending	Military expenditure, market exchange rates	Military expenditure converted at 2015 average market exchange rates, current US\$ (2015); United States Bureau of Arms Control, Verification and Compliance
	Military expenditure, defence sector PPP	Military expenditure at a notionally estimated defence sector purchasing power parity rate, constant prices (2015); United States Bureau of Arms Control, Verification and Compliance
Armed forces	Military and paramilitary forces	Active military and paramilitary personnel (2017); IISS Military Balance 2017
	Training, readiness and sustainment	Training and preparedness for sustained operations in the event of interstate conflict (2017); Lowy Institute Defence Network, expert assessment
	Organisation: Combat experience	Combat experience relevant to the ability of armed forces to engage in interstate conflict (2017); Lowy Institute Defence Network, expert assessment
	Organisation: Command and control	Exercise of authority and direction over armed forces in the event of an interstate conflict (2017); Lowy Institute Defence Network, expert assessment
Weapons and	Land warfare: Manoeuvre	Proxy: Main battle tanks and infantry fighting vehicles (2017); IISS Military Balance 2017
platforms	Land warfare: Firepower	Proxy: Attack helicopters, used in close air support for ground troops (2017); IISS Military Balance 2017
	Maritime warfare: Sea control	Proxy: Principal surface combatants — frigates, destroyers, cruisers and carriers (2017); IISS Military Balance 2017
	Maritime warfare: Firepower	Proxy: Missile vertical launching cells on board principal surface combatants and submarines (2017); IISS Military Balance 2017
	Maritime warfare: Sea denial	Proxy: Tactical submarines (2017); IISS Military Balance 2017
	Air warfare: Fighters	Fighter ground attack aircraft (2017); IISS Military Balance 2017
	Air warfare: Enablers	Proxy: Transport aircraft, airborne early warning and control (AEW&C) aircraft, and intelligence, surveillance and reconnaissance (ISR) aircraft (2017); IISS Military Balance 2017
	Technology, maintenance and range	Technology, maintenance and range of weapons systems, equipment and materiel (2017); Lowy Institute Defence Network, expert assessment

#### MILITARY CAPABILITY (CONTINUED)

Sub-measure	Indicator	Technical description
Signature capabilities	Nuclear weapons capability	States with nuclear weapons (2017); Lowy Institute
	Nuclear weapons range	Maximum estimated nuclear missile range (2017); CSIS Missile Defense Project
	Ground-based nuclear missile launchers	Launching platforms for intercontinental ballistic missiles (ICBM), intermediate-range ballistic missiles (IRBM), medium range ballistic missiles (MRBM), short-range ballistic missiles (SRBM), and ground- launched cruise missiles (GLCM) among nuclear armed Index countries (2018); IISS Military Balance 2018
	Nuclear second-strike capability	Proxy: Ballistic missile submarines (2017); IISS Military Balance 2017
	Long-range maritime force projection	Carriers and principal amphibious ships (2017); IISS Military Balance 2017
	Area denial capabilities	Area denial capabilities: Air defence, anti-naval, and intelligence, surveillance, reconnaissance and targeting capabilities (2017); Lowy Institute Defence Network, expert assessment
	Intelligence capabilities	Intelligence capabilities: Institutional know-how, overseas reach, personnel and technological sophistication (2017); Lowy Institute Defence Network, expert assessment
	Cyber capabilities	Defensive and offensive cyber capabilities (2017); Lowy Institute Defence Network, expert assessment
Asian military posture	Ground forces deployment	Ability of ground forces to deploy with speed and for a sustained period in the event of a major continental military confrontation in the Asia-Pacific region (2017); Lowy Institute Defence Network, expert assessment
	Naval deployment	Ability of the navy to deploy with speed and for a sustained period in the event of a major maritime military confrontation in the Asia-Pacific region (2017); Lowy Institute Defence Network, expert assessment



# 

Sub-measure	Indicator	Technical description
Geoeconomic security	Diversity of export products	Total products exported to at least one foreign market with a value of at least US\$10,000 (2016); World Integrated Trade Solution
	Diversity of export markets	Foreign markets to which exporter ships at least one product with a trade value of at least US\$10,000 (2016); World Integrated Trade Solution
	Dependency on global trade (%)	Trade as a share of GDP (2016); World Bank, CIA World Factbook, Bank of Korea, IMF WEO, October 2017
	Dependency on primary trade partner (%)	Two-way trade with primary trade partner as a share of total trade (2015); World Integrated Trade Solution
	Net energy deficit (%)	Primary energy production shortfall as a share of total primary energy use (2015); IEA Atlas of Energy, ASEAN Centre for Energy, Greater Mekong Subregion Information Portal
	Net energy surplus (%)	Primary energy production surplus as a share of total primary energy use (2015); IEA Atlas of Energy, ASEAN Centre for Energy, Greater Mekong Subregion Information Portal
	Net energy exports	Net energy exports in million tonnes of oil equivalent (2015); IEA country indicators, Ministry of Energy and Mines, Lao PDR
	Rare-earth metals supply	Mining production of rare-earth metals, tonnes (2016); US Geological Survey
Geopolitical security	Population relative to neighbours	Population as a share of neighbouring country populations (weighted at 100% for neighbouring countries with land borders; 75% for neighbouring countries divided by a strait; 25% for neighbouring countries with touching or overlapping claimed EEZ boundaries) (2016); World Bank, Taiwan Statistical Data Book, CIA World Factbook
	Landmass deterrent	Country landmass, square kilometres (2017); World Bank, Taiwan Statistical Data Book
	Demographic deterrent	Total population (2016); World Bank, Taiwan Statistical Data Book
	Interstate conflict legacies	Years of interstate conflict with neighbouring countries as a primary party (1948–2016); Uppsala Conflict Data Program
	Boundary disputes	Overlapping territorial claims and/or unresolved land border and maritime demarcations (2017); Lowy Institute
Institutional	Government effectiveness	Government Effectiveness: Percentile Rank (2016); Worldwide Governance Indicators
stability	Political stability	Political Stability and Absence of Violence/Terrorism: Percentile Rank (2016); Worldwide Governance Indicators
	Civil unrest	Number of recorded violent protests (2013–17); Global Database of Events, Language, and Tone
	Internal conflict years	Number of years since 1946 in which at least one internal armed conflict resulted in 25 or more battle-related deaths (1946–2016); Uppsala Conflict Data Program
	High-intensity internal conflict years	Number of years since 1946 in which at least one internal armed conflict resulted in 1000 or more battle-related deaths (1946–2016); Uppsala Conflict Data Program
	Infant mortality	Number of infants dying before reaching one year of age, per 1000 live births in a given year (2016); World Bank; CIA World Factbook
	Merchant fleet	Total fleet, dead-weight tons (2017); UNCTAD
	Travel hub: International airlines	Number of international airlines flying into principal airport hub (2017); Lowy Institute





#### FUTURE TRENDS

Sub-measure	Indicator	Technical description
Economic size 2030	GDP 2030	GDP forecast at purchasing power parity, constant 2016 prices (2030); Lowy Institute, IMF WEO, October 2017
Military expenditure 2030	Military expenditure 2030, defence sector PPP	Projection based on military expenditure at defence sector PPP rate as a constant share of GDP PPP, constant 2015 prices (2030); Lowy Institute, US Department of State
Working-age	Working-age population, 2030	Medium variant forecast for total working-age population, 15–64 (2030); Lowy Institute, UNPD

## DIPLOMATIC INFLUENCE

Sub-measure	Indicator	Technical description
network Embassies (regional) Global Diplomacy Index 2   Embassies (global) Number of embassies, hit Diplomacy Index 2017   Second-tier diplomatic network (regional) Consulates and other rep Index 2017   Diplomatic service Efficacy of country's diplo	Embassies (regional)	Number of embassies, high commissions and permanent missions in Index countries (2017); Lowy Institute Global Diplomacy Index 2017
	Embassies (global)	Number of embassies, high commissions and permanent missions globally (2017); Lowy Institute Global Diplomacy Index 2017
	Consulates and other representative offices in Index countries (2017); Lowy Institute Global Diplomacy Index 2017	
	Diplomatic service	Efficacy of country's diplomatic service and wider foreign policy bureaucracy (2017); Lowy Institute Diplomatic Network, expert assessment
Multilateral	Institutional voting shares	Average voting share by subscribed capital in major multilateral development banks (2017); Lowy Institute
power	Pripole Diplomatic clubs and summits Membership in select diplomatic clubs and sum	Membership in select diplomatic clubs and summits (2017); Lowy Institute
	Intergovernmental organisations	Membership in select regional intergovernmental organisations (2017); Lowy Institute
Political leadership	Political leadership (regional)	Efficacy of political leaders in advancing their country's diplomatic interests in Asia (2017); Lowy Institute Diplomatic Network, expert assessment
	Political leadership (global)	Efficacy of political leaders in advancing their country's diplomatic interests globally (2017); Lowy Institute Diplomatic Network, expert assessment

## ECONOMIC RELATIONSHIPS

Sub-measure	Indicator	Technical description
Regional trade relations	Trade with region	Total value of trade with Index countries, current dollars (2015); World Integrated Trade Solution, Atlas of Economic Complexity
	Primary trade partner	Number of Index countries in which state is the primary regional trading partner (2015); World Integrated Trade Solution, Atlas of Economic Complexity
	Regional selling power	Average imports share in 24 Index countries (2015); World Integrated Trade Solution, Atlas of Economic Complexity
	Regional buying power	Average exports share in 24 Index countries (2015); World Integrated Trade Solution, Atlas of Economic Complexity
Regional investment ties	Foreign investment in region	Total stock of outward foreign direct investment in 24 Index countries, current dollars (2012); UNCTAD, Lowy Institute
	Primary foreign investor	Index countries in which state is the primary regional inward foreign direct investor, based on FDI stock (2012); UNCTAD, Lowy Institute
	Average share of investment	Average share of inward foreign direct investment in 24 Index countries, based on FDI stock (2012); UNCTAD, Lowy Institute
Economic diplomacy	Global FTAs	Bilateral and multilateral free trade agreements concluded by Index countries with other countries globally (2017); WTO
	Regional FTAs	Bilateral and multilateral free trade agreements concluded between Index countries (2017); WTO
	Foreign assistance (global)	Annual overseas development assistance (ODA) and other official flows (OOF), current dollars (2016); OECD, AidData
	Foreign assistance (regional)	Annual overseas development assistance (ODA) and other official flows (OOF) to Asia, current dollars (2016); OECD, AidData





#### **DEFENCE NETWORKS**

Sub-measure	Indicator	Technical description
Regional alliance network	Regional military alliances	Number of codified alliances between Index countries, including a mutual defence clause or actionable security guarantee (2017); Alliance Treaty Obligations and Provisions Project, Lowy Institute
	Allied force deployments	Allied military personnel deployed in Index countries: minimum of 50 personnel deployed on a permanent or semi-permanent rotational basis (2017); IISS Military Balance 2017
	Joint training (allies)	Number of joint training exercises conducted with allied Index countries (2012–16); IISS Military Balance 2013–17
	Joint conflict years (allies)	Years of conflict fought side by side with allied Index countries, as a primary or supporting party (1948–2016); Uppsala Conflict Data Program
	Arms procurements (allies)	Arms imports from allied Index countries expressed in SIPRI Trend Indicator Values (2011–16); SIPRI Arms Transfers Database
	Alliance force multiplier	Ratio of combined allied military capabilities to autonomous military capability (2017); Lowy Institute
Regional non-allied	Joint training (non-allies)	Number of joint training exercises conducted with non-allied Index countries (2012–16); IISS Military Balance 2013–17
partners	Defence consultation pacts	Defence consultation pacts between non-allied Index countries (2017); Alliance Treaty Obligations and Provisions Project, Lowy Institute
	Foreign deployments	Military personnel deployed to or from non-allied Index countries: minimum of 50 personnel deployed on a permanent or semi-permanent rotational basis (2017); IISS Military Balance 2017
	Joint conflict years (non-allies)	Years of conflict fought side by side with non-allied Index countries, as a primary or supporting party (1948–2016); Uppsala Conflict Data Program
	Arms procurements (non-allies)	Arms imports from non-allied Index countries expressed in SIPRI trend indicator values (2011–16); SIPRI Arms Transfers Database
Global arms transfers	Arms transfer deliveries	Annual arms imports and exports, current dollars (2015); United States Bureau of Arms Control, Verification and Compliance
	Arms export partnerships	Arms export recipients, including state and non-state groups (2011–16); SIPRI Arms Transfers Database



### CULTURAL INFLUENCE

Sub-measure	Indicator	Technical description
Cultural projection	Google interest	Interest abroad in country; average Google search interest in 23 Index countries over 12-month period (2016–17); Google Trends, Lowy Institute
	Cultural exports (%)	Share of total value of exports of cultural goods and services from Index countries (2012); UNESCO
	Global brands	Number of brands in the Global 500 (2018); Brand Directory
	Prestige: Skyscrapers	Buildings in financial capital above 150 metres in height (2018); Council on Tall Buildings and Urban Habita
	Status: Visa-free travel	Number of countries that citizens can travel to visa-free (2018); Henley & Partners
	Cultural heritage	UNESCO World Heritage listed sites (2017); UNESCO
Information flows	Inbound Asian international students	International students enrolled in tertiary education from East, South and West Asia and the Pacific (2016); UNESCO, ICEF Monitor, Lowy Institute
	News agencies	Interest abroad for national news agencies; average Google search interest in 23 Index countries over 12-month period (2016–17); Google Trends, Lowy Institute
	Newspapers	Interest abroad for selected national newspapers; average Google search interest in 23 Index countries over 12-month period (2016–17); Google Trends, Lowy Institute
		Interest abroad for selected television broadcasters; average Google search interest in 23 Index countries over 12-month period (2016–17); Google Trends, Lowy Institute
	Radio broadcasters	Interest abroad for public radio broadcaster; average Google search interest in 23 Index countries over 12-month period (2016–17); Google Trends, Lowy Institute
People	Regional diaspora	Outward migrant stock by country of origin settled in Index region (2017); UN DESA, Taiwan News
exchanges	Regional immigrant stock	Inward migrant stock from Index region by country of destination (2017); UN DESA, Taiwan National Immigration Agency
	Regional tourist arrivals	Arrivals of non-resident visitors from Index countries at national borders (2016); UNWTO, UNWTO Tourism Highlights 2017, Reuters

