

# Sustaining the Gains: *Feasibility of Risk Financing for Education*

Task 3 Report

Annexes

Willis Towers Watson

Start Network & Save the Children

Overseas Development Institute

June 2017

# Table of Contents

<b>Annex 1</b>	<b>Definitions</b> .....	<b>1</b>
A1.1	<i>MIGA Definitions</i> .....	1
A1.2	<i>Willis Towers Watson political risk peril definitions</i> .....	2
<b>Annex 2</b>	<b>Cambridge Centre for Risk Studies, Taxonomy of Risk</b> .....	<b>4</b>
<b>Annex 3</b>	<b>Example of Political Risk Insurance Request</b> .....	<b>7</b>
<b>Annex 4</b>	<b>VAPOR</b> .....	<b>9</b>
A4.1	<i>Frequency assessment</i> .....	9
A4.2	<i>Vulnerability assessment</i> .....	10
A4.3	<i>Confidence assessment</i> .....	10
A4.4	<i>Available GPE partner country political violence (PV) risk index trend</i> .....	10
A4.5	<i>“Heat map” of exposures</i> .....	11
A4.6	<i>Country level view of expected loss</i> .....	12
A4.7	<i>VAPOR losses</i> .....	12

# Annex 1 Definitions

## A1.1 MIGA Definitions

A full list of MIGA definitions is available online at:

[www.miga.org/Documents/Glossary\\_of\\_Terms\\_Used\\_in\\_the\\_Political\\_Risk\\_Insurance\\_Industry.pdf](http://www.miga.org/Documents/Glossary_of_Terms_Used_in_the_Political_Risk_Insurance_Industry.pdf)

Title	Description
Arbitration	A process to settle a legal dispute in which the third party (the arbitrator) acts much like a judge, but in an out-of-court and less formal setting and does not actively participate in the discussions
Breach of contract	Loss resulting from government termination of contracts without compensation for existing investments in a product or service
Civil strife damage	Property or income losses from domestic political violence, including hostile actions by national forces, civil war, revolution, insurrection, or politically motivated terrorism or sabotage
Coinsurance	Insurance held jointly by two or more insurance providers
Creeping expropriation	A series of events by a government (or a sub-sovereign entity) that results in a deprivation of the investor's rights
Expropriation	An action whereby a government seizes property of assets of the foreign investor without full compensation to the investor. This is also referred to as 'ownership risk' or nationalization
Inconvertibility	An action taken by a government to prevent conversion of local currency to some form of foreign exchange. This is also referred to as 'transfer risk'
Mediation	A process to settle a legal dispute through active participation of a third party (the mediator), who works to find points of agreement and make those in conflict agree on a fair result
Political risk	Political risks are associated with government actions which deny or restrict the right of an investor/owner (i) to use or benefit from his/her assets; or (ii) which reduce the value of the firm. Political risks include war, revolutions, government seizure of property and actions to restrict the movement of profits or other revenues from within a country
Political risk management	Actions taken by investors to manage political risk, such as incorporating political risk into the company's financial equation, obtaining information from diverse sources and applying portfolio theory to international investments
Political violence damage	Property or income losses arising from violence undertaken for political purposes, such as declared or undeclared war, hostile actions by national or international forces, civil war, revolution, insurrection and civil strife (See Civil strife damage)
Reinsurance	The process of a political risk insurance provider issuing a guarantee with other providers in order to reduce exposure by spreading the risk among the institutions involved
Tenor	The term of a political risk insurance contract

## A1.2 Willis Towers Watson political risk peril definitions

### A1.2.1 Investment coverages

Coverage	Description	Claim Compensation Basis
Confiscation, Expropriation, Nationalization, Deprivation	Acts by the host government that interfere with the ownership of the foreign enterprise including but not limited to confiscation, expropriation, nationalization. NOTE: "creeping expropriation" is an act or a series of acts, that when combined, have a confiscatory effect. Deprivation means the Insured being deprived of the use or possession of the whole or part of its inventory or equipment outside the Host Country/territorial waters because the insured cannot obtain an export license from the government of the Host Country	Net Investment Value
Inability to Export and License Cancellation, Embargo / Sanctions	Inability to Export/Import: the inability to export or import due to a law, order, decree of either the Host Government or the Insured's Government (aka Embargo). License cancellation: cancellation, termination, revocation, amendment by government of Host Country of a previously issued and currently valid operating license.	Net Investment Value
Selective Discrimination	The imposition of any law, order, decree, regulation or import/export restriction, selectively and discriminately, against the foreign enterprise by the government of the Host Country which in circumstances beyond the control of the Insured, selectively prevents	Net Investment Value
Forced Abandonment	Abandonment of a foreign enterprise as a result of advice by the home government to evacuate key operations personnel from the host country or a relevant region because of political violence.	Net Investment Value
Forced Divestiture	The imposition of any law, order, decree, regulation, by the government of the Insured's country that requires the Insured to divest itself of all or part of its shareholding in the foreign enterprise.	Net Investment Value
Currency Inconvertibility / Non-transfer	Delay or inability of a foreign enterprise to exchange local currency into hard currency or to repatriate funds to the parent company (or possibly another company)	Sums of funds attempted to be repatriated

Political Violence	Physical damage to assets in the Host Country caused by war, civil war, revolution, insurrection, rebellion, strikes, riots, civil commotion, sabotage, or terrorism	Replacement cost of assets damaged (if repaired or replaced. If not, book value)
Business Interruption due to PV/CEN	Loss of revenue (and potentially extra expense) resulting from business operations interrupted by political violence (or expropriation).	Loss of profit, extra expense, ongoing expenses up during the period of indemnity

### A1.2.2 Cross-border trade coverages

Coverage	Description	Claim Compensation Basis
Arbitration Award Default	Inability to enforce an arbitral award (the nonpayment) obtained by a foreign investor against the Host Government or a state-owned enterprise, in accordance with the terms and conditions of a project (e.g. Power Purchase Agreement)	The amount of the unpaid award
Contract Frustration	Losses from a cancelled or problematic contract due to nonpayment by a government counterparty or losses from a non-governmental counterparty due to political risk including expropriation of the buyer, war, civil war, law order, decree, cancellation of export/import license, currency inconvertibility)	Unpaid and contractually due invoices, plus accrued but un-invoiced expenses
Wrongful Call / Call Due to Political Risk	(A) Unfair calling by a government counterparty of an on-demand, callable stand by letter of credit posted in favor of the counterparty as a advance payment/performance guarantee or (B) the fair calling of the L/C due to the inability of the Insured to fulfill its contractual terms due to an occurrence of political risk (war, civil war, revolutions, riots, strike, expropriation etc.)	Amount of the Letter of Credit drawn from the Insured's account
Trade Disruption	Loss of profit and extra expense following delays/interruptions in movements of goods in the supply chain due to named perils including political perils, natural disaster perils, and insolvency of a 3rd party supplier	Amount of the Letter of Credit drawn from the Insured's account

# Annex 2 Cambridge Centre for Risk Studies, Taxonomy of Risk

Primary Class: A. Finance & Trade					
Family	ID	Threat Type (Genus)	Description	Historical Examples	
<b>1 Financial Shock</b>  Events in the financial system causing short-run fluctuations and/or significant changes in long-run economic growth	1.1	<b>Asset Bubble</b>	Pricing inflation and sudden collapse for a major sector or asset class	Sub-Prime Property bubble 2008; 'dot-com' bubble 1999; South Sea bubble 1720; Amsterdam Tulip bubble 1637	
	1.2	<b>Financial Irregularity</b>	Corporate or accounting fraud; Rogue trading; Ponzi schemes; or other major irregularities	Worldcom 2002; Enron 2001; Jerome Kerviel (Societe Generale) 2008; Nick Leeson (Barings Bank) 1995; Bernard Madoff (\$18 Bn ponzi scheme) 2009	
	1.3	<b>Bank Run</b>	Bank failure; Credit default for major banks, banking system or market participant	Lehman Brothers 2008; Bear Sterns 2008; IndyMac 2008; Northern Rock 2007; U.S. Savings and Loan crisis 1980s/1990s	
	1.4	<b>Sovereign Default</b>	Debt default, currency devaluation or government failure and/or change	Greek sovereign debt crisis 2010-; Argentina crisis 1999-2002; Russian crisis and LTCM 1998; Black Wednesday (UK withdrawal from ERM) 1992; Repudiation of Confederate debt (post US civil war) 1864	
	1.5	<b>Market Crash</b>	Extreme correlated mass movement of share prices, possibly driven by information or perception about economic fundamentals	May Flish Crash 2010; Black Monday Stock Market crash 1987	
<b>2 Trade Dispute</b>  Events causing widespread change or disruption to international trading conditions	2.1	<b>Labour Dispute</b>	Strikes, mass refusal of employees to work, or picketing by aggrieved workforce to prevent commercial activity	International Labour Workers Union (ILWU) work-to-rule slowdown 2002; UK Miners' strikes 1984-85; US West Coast waterfront strike 1934; UK General strike 1926; Dublin lock out 191	
	2.2	<b>Trade Sanctions</b>	Country-to-country trade embargos denying entry or passage of commercial goods and services	Russia-Ukraine (Gazprom dispute disrupts gas supplies to Europe) 2009; US-EU ('Banana trade war') 1999; US-Cuba 1960	
	2.3	<b>Tariff Wars</b>	Protectionism through the imposition of taxation of a particular set of goods or services	US tax on Chinese tyres 2008 (reciprocated by Chinese tax on US Chicken imports); US Steel tariff 2002 (withdrawn after EU threatens reciprocal tariff on Florida oranges and Michigan cars)	
	2.4	<b>Nationalization</b>	Sovereign appropriation of foreign-owned assets in that country	Icelandic banks 2008; Venezuela (seizes operational control of Orinoco belt) 2007; Cuba (nationalises all foreign-owned companies) 1959; Egypt (nationalises Suez canal) 1956	
	2.5	<b>Cartel Pressure</b>	Trading bloc of suppliers applies pricing or supply pressures	NAFTA Tortilla crisis 2007; Opec Oil Crisis 1973; DeBeers monopoly end Diamond syndicate 1889	



Primary Class: B. Geopolitics & Society				
<b>3 Geopolitical Conflict</b>  Military engagements and diplomatic crises between nations with global implications	3.1	<b>Conventional War</b>	The engagement of two or more nations in military conflict, using conventional weapons to target military infrastructure and invade/defend sovereignty	Gulf War II Iraq 2003; Gulf War Kuwait & Iraq 1990-91; Falklands War 1982; World War II 1939-4
	3.2	<b>Asymmetric War</b>	Military action, insurgency and violent resistance carried out between combatants of significantly different power, resources, and interests	Iraqi insurgency resistance to the occupation of US forces from 2003; Afghanistan insurgency resistance to occupation forces of US and allies from 2001; Colombian guerilla war 1963+
	3.3	<b>Nuclear War</b>	Military Conflict pursued using nuclear weapons	Bombing of Hiroshima and Nagasaki in Japan 1945; Near-misses include Cuban missile crisis 1962
	3.4	<b>Civil War</b>	Internal conflict within a country, including wars of succession and coups d'etat	Libya civil war 2011 (coup 1969); Sri Lankan civil war 1983-2009; Darfur, Sudan 2009; Rwanda 1990-93; Bosnia 1992-95; Russian coup 1993; American Civil War 1861-65
	3.5	<b>External Force</b>	Blockades, No-Fly zones, missile attack or other military action by external forces to prevent national authorities pursuing internal policies deemed harmful or repugnant	Libya (No Fly Zone) 2011; Israeli sea and land blockade of the Gaza Strip, since 2000; Iraq (NFZ) 1991-2003; Bosnia and Herzegovina (NFZ) 1993-95; Egyptian blockade of Straits of Tiran to Israel-bound ships (1956-57)
<b>4 Political Violence</b>  Acts or threats of violence by individuals or groups for political ends	4.1	<b>Terrorism</b>	Politically-motivated single or coordinated attack(s) to inflict societal and/or economic fear and disruption	2001 World Trade Center Attack by Al Qaeda; Sarin gas attack on Tokyo Subway by Aum Shinrikyo; London July bombings 2005; Mumbai shooting massacre 2008; Beirut US barracks bombing 1983
	4.2	<b>Separatism</b>	Sustained campaign of violence for regional independence	Sri Lanka, Tamil Tigers 1983-2009; Russia-Chechnya 1990-2009
	4.3	<b>Civil Disorder</b>	Riots and civil disobedience, through to uprisings and revolutions	Arab Spring 2011; France banlieues riots 2005; Palestinian Intifada 2000-; Fall of Berlin Wall 1989
	4.4	<b>Assassination</b>	Assassination of a major political leader	Benazir Bhutto 2007; Yitzhak Rabin 1995; Anwar Sadat 1981; Attempt on Ronald Reagan 1981; John F. Kennedy 1963; Czar Nicolas II 1918; Franz Ferdinand 1914
	4.5	<b>Organized Crime</b>	Crime waves, Campaigns of criminal extortion, piracy, or mass illegal activities that debilitates commercial activity	Somalia Piracy in Horn of Africa 2005-2010; Mexican Drug War 2006; Piracy Malacca Straits 2004; First Mafia war, Italy, 1962

Primary Class: C. Natural Catastrophe & Climate				
<b>5 Natural Catastrophe</b>  Naturally occurring phenomena causing widespread damage and disruption	5.1	<b>Earthquake</b>	Seismic fault rupture causes high levels of damage to infrastructure of a populated area	Tohoku, Japan 2011; Kobe, Japan 1995; Northridge, California 1994; Great Kanto earthquake, Japan 1923; San Francisco 1906; Northridge, California, 1994
	5.2	<b>Windstorm</b>	Hurricane/typhoon/cyclone wind system makes landfall onto a major populated area; European-type windstorm system, large scale, fast-moving, gale force wind speeds	Hurricane Katrina, USA, 2005; Hurricane Andrew, USA, 1992; European Windstorm Lothar 1999; Typhoon Mireille, Japan, 1991
	5.3	<b>Tsunami</b>	Coastal impact of a tidal wave, caused by offshore earthquake, marine landslide, or ocean meteorite	Boxing Day Tsunami 2004; Japan Tohoku tsunami 2011
	5.4	<b>Flood</b>	River Flood from high rainfall/sudden water release across one or more river systems; Coastal Flood from sea surge caused by low pressure weather systems, exceptional tides and winds	River: Queensland Australia 2011; Coastal: East Coast UK 1953
	5.5	<b>Volcanic Eruption</b>	Ash, pyroclastic hot gasses, lava, and lahar-triggered mudflows cause localized destruction and regional disruption	Ash eruption of Eyjafjallajokull, Iceland 2010; Pinatubo eruption, Philippines, 1990
<b>6 Climatic Catastrophe</b>  Climatic anomalies or extremes causing severe weather conditions	6.1	<b>Drought</b>	Extended period of below-average precipitation	Horn of Africa 2011; Texas, US 2011; Australia 1994; Europe 1976; Sahel, Africa 1960s-; China 1941; US 'Dust Bowl' 1931-38
	6.2	<b>Freeze Event</b>	Extended period of below-average temperatures	UK 2010; Moscow, Russia 2010; North American Ice Ice Storm 1998; Idaho Ice Storm 1961
	6.3	<b>Heatwave</b>	Extended period of above-average temperatures	US 2011; Russia 2010; France 2003; Chicago 1995; US 1980
<b>7 Environmental Catastrophe</b>  Crises leading to significant and widespread change to environmental or ecological equilibriums	7.1	<b>Sea Level Rise</b>	Thermal expansion of the oceans or sudden ice shield melt changes coastline geography	Interglacial sea level rises in previous epochs
	7.2	<b>Ocean System Change</b>	Sudden switch in the circulatory systems of the ocean, such as the Gulf Stream, caused by salination or thermal changes, causes regional climatic change	'Broecker' event 8,000 BC
	7.3	<b>Atmospheric System Change</b>	Rapid or sustained periods of change in patterns of meteorological circulation, such as jet stream, causes regional climatic change	'Dansgaard-Oeschger' events 11,500 years ago
	7.4	<b>Pollution Event</b>	Spillage or major release of toxic chemicals into land or sea systems that causes environmental destruction	BP Oil Spill Deepwater Horizon 2010; Niger Delta Oil Spill 1998; Exxon Valdez oil spill 1989; Japan Mercury Pollution of Minamata Bay 1956
	7.5	<b>Wildfire</b>	Uncontrolled inferno, enhanced by natural landscape and environmental factors	New South Wales, Australia (Bush Fires) 2003; Oakland, California (Fires) 1991; Indonesia (Forest Fire) 1982; Wisconsin (Great Peshtigo Wild Fire) 1871.

Primary Class: D. Technology & Space				
<b>8 Technological Catastrophe</b>  Accidental or deliberate industrial events affecting local and global stakeholders	8.1	<b>Nuclear Meltdown</b>	Major core meltdown of a nuclear power station, causing radioactive fallout over a large area of population and economic and agricultural productivity	Fukushima Daiichi, Japan 2011; Chernobyl 1986; Three Mile Island 1979; Windscale, UK 1957
	8.2	<b>Industrial Accident</b>	Fire, explosion or release of toxic chemicals from an industrial complex, storage facility or during transportation	Toulouse France Explosion 2001; Bhopal India
	8.3	<b>Infrastructure Failure</b>	Blackouts in the electricity supply network and other systems failures due to accidents and technical breakdowns	Great New York Blackout of 2003; Enron California brown-outs 2000
	8.4	<b>Technological Accident</b>	New technological advance proves to have unexpected societal effects and causes disruption or harm to human populations	Bisphenol A (BPA) ban from use in baby bottle manufacturing 2010, DDT 1940-72, Thalidomide 1957-61
	8.5	<b>Cyber-Catastrophe</b>	Computer networks, communications and information technology systems destabilized by computer virus, hacking, denial of service attacks or other cyber-security issues	Unlimited Operation' \$45m cash stolen in 12 hours 2012-2013; 'Comment Crew'/'APT1' espionage attacks 2006-2013; 'Stuxnet' attack on Iran Natanz nuclear facility 2010; 'Conficker' Worm 2007; 'MyDoom/Novarg' worm 2004; 'SQL Slammer' 2003; 'I Love You' Virus 2000
<b>9 Externality</b>  Threats originating from outside the earth's atmosphere including astronomical objects and space weather	9.1	<b>Meteorite</b>	Ground impact of meteors that cause localized destruction, and dust clouds capable of causing periods of ash winter	Tunguska meteorite explosion, Russia 1908; Chicxulub Crater, Yucatan, Cretaceous-Tertiary extinction event
	9.2	<b>Solar Storm</b>	Solar flare activity that can impact satellites, communication technology, power distribution systems and other infrastructure	Carrington Event geomagnetic storm of 1859;

Primary Class: E. Health & Humanity				
<b>10 Disease Outbreak</b>  Disease outbreaks affecting humans, animals and/or plants	10.1	<b>Human Epidemic</b>	Influenza pandemics, emerging infectious diseases and re-emergent disease epidemics that cause death and illness in human populations	1918 Influenza Pandemic; 2009 Swine Flu Pandemic; HIV/AIDS 1982+; SARS 2002
	10.2	<b>Animal Epidemic</b>	Diseases in animals that cripple agricultural production of meat and poultry or destroy wildlife	Mad Cow Disease (BSE) Epidemic, UK 1987; Foot & Mouth cattle epidemic, Korea, 1997; Swine Fever, Netherlands 1997; Avian Influenza 2004;
	10.3	<b>Plant Epidemic</b>	Diseases in plants that impact food production in many agricultural areas or cause destruction of the ecological environment.	Sudden death syndrome (SDS) in soybeans US Corn Belt 2010; Dutch Elm Disease, Europe 1967; Wheat Stem Rust Outbreak, US 1962; Wheat Stem Rust Outbreak, West Africa 1999
<b>11 Humanitarian Crisis</b>  Impact of conditions on mass populations of people	11.1	<b>Famine</b>	A large population suffers failure of their food supply, food distribution, or agricultural production system	Ethiopia Famine 1998-2000; North Korean Famine 1996; Bangladesh Famine 1974; Biafra Famine 1967-70; Great Chinese Famine of 1959-1961; Dutch famine 1944; Soviet Famine 1932-3;
	11.2	<b>Water Supply Failure</b>	A large population suffers failure of their water supply due to water resource conflicts, river diversion, aquifer depletion, or other cause	Horn of Africa drought 2011; Cochamba Water Wars, Bolivia, 2000; Klang Valley water crisis 1996; Sahel drought 1970s; Battle of BeerSheba over water resources for Palestine 1917
	11.3	<b>Refugee Crisis</b>	Mass population movements cause instability and collapse of social infrastructure in the areas newly populated and depopulated	Exodus from Zimbabwe 2008; US Mass Migration to the industrial north 1930-; India-Pakistan partition 1947; Economic migration of Latin Americans to North America
	11.4	<b>Welfare System Failure</b>	Collapse of pension schemes, health programs, and social security systems leading to deprivation and hardship for dependents. Breakdowns triggered by underfunding, and imbalances e.g. ageing populations	Post-Soviet 'shock therapy' dismantling of welfare system in Russia 1992; Municipal Pension Defaults, US cities, 2010; New Jersey Pension Fund insolvency, 2009; Ireland state pension credit downgrade, 2008

Primary Class: F. Other				
<b>12 Other</b>  Other threats				



## Annex 3 Example of Political Risk Insurance Request

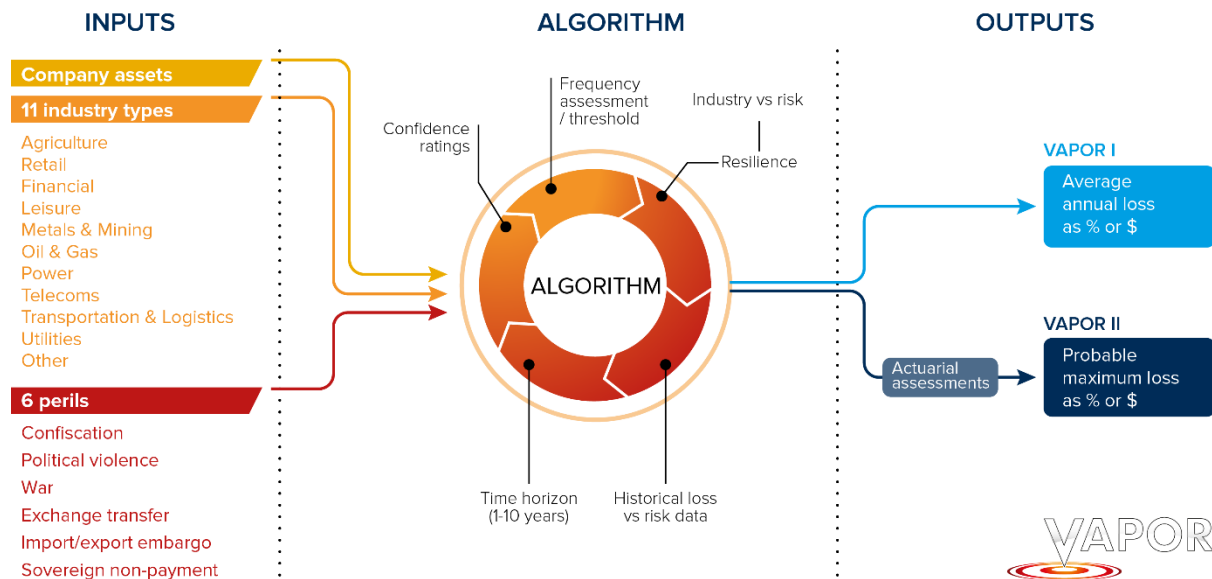
### Request for Non-Binding Indication Political Risk Insurance

<b>Item 1.</b>	<b>Insured:</b>	Enter the legal name, address, and website of the entity which is investing in the host countries. This is typically the US parent company.  Example: ABC Holdings, Inc. Philadelphia, PA 19154-4599 USA
<b>Item 2.</b>	<b>Insured's Country:</b>	Enter country in which the Insured is domiciled  Example: United States of America
<b>Item 3.</b>	<b>Policy Period:</b>	Enter the desired term for the policy's inception thru expiration. Most policy terms are three or five years. During this term, underwriters are committed to the capacity i.e. cannot cancel the policy. The rate on line is also guaranteed regardless of country risk deterioration.  Example: July 1, 2017- July 1, 2020
<b>Item 4.</b>	<b>Host Country(ies):</b>	Enter the countries desired to be insured.  Example: China, Malaysia, Indonesia, India, South Africa, Kenya, Argentina, Brazil, Guatemala, Mexico.
<b>Item 5.</b>	<b>Foreign Enterprise(s):</b>	Enter the types of entities operating in the host countries i.e. subsidiaries, joint ventures. If possible, supply list of names. If it is cumbersome to supply names at this NBI stage, this information can be provided later before binding.  Example: The Insured's wholly or partially owned subsidiaries and joint ventures, where the Insured has an Equity Ownership Interest, operating in the Host Countries
<b>Item 6.</b>	<b>Description of Principal Activity of the Foreign Enterprise:</b>	Enter a general description of the operations of the foreign enterprises.  Example: Packaging manufacturing plants, sales and service facilities.

<b>Item 7.</b>	<b>Coverages:</b>	<p>Select all of the covers desired to be insured.</p> <p>Choose from:</p> <ul style="list-style-type: none"> <li>A. Expropriatory Act</li> <li>B. Selective Discrimination</li> <li>C. Inability to Export</li> <li>D. Forced Divestiture</li> <li>E. Forced Abandonment</li> <li>F. Political Violence including terrorism</li> <li>G. Business Interruption</li> <li>H. Currency Inconvertibility/ Non-Transfer</li> </ul> <p>Example: all of the above</p> <p style="text-align: right;">War</p>
<b>Item 8.</b>	<b>Maximum Limit of Liability:</b>	<p>Enter the maximum limit of liability you desire for the policy and any perils sublimits.</p> <p>Example: USD \$50,000,000  Currency Inconvertibility Sub-limit: USD 5,000,000  Political subject to Host Country Sub-Limits</p>
<b>Item 9.</b>	<b>Political Violence Deductible:</b>	<p>Enter the amount desired for a deductible for losses of Political Violence</p> <p>Example: USD \$200,000</p>
<b>Item 10.</b>	<b>Waiting Period:</b>	<p>Enter in the desired waiting period i.e. the time frame for before a claim can be paid. It is intended to be a 'cure period' in which circumstances may hopefully improve/desist. Note the 180 days is a market standard and generally not negotiable. It does not apply to Political Violence claims</p> <p>Example: 180 days for all Expropriation perils (A-E) and Currency Inconvertibility</p>
<b>Item 11.</b>	<b>Additional Information:</b>	<p>Attach detailed information about the property (statement of values- SOV), net investment values if available, contracts with Governments, and currency remittances if available.</p> <p>Example: attached is the property SOV</p>
<b>Item 12.</b>	<b>Need by Date:</b>	<p>Enter the requested deadline for indications to be provided to Willis Towers Watson</p> <p>Example: March 15, 2017</p>

## Annex 4 VAPOR

The Oxford Analytica / Willis Towers Watson VAPOR (Value at Political Risk) system allows global companies to assess and compare the financial implications of exposure to a suite of political risks – in individual countries, regionally or globally – using an interactive online tool that is updated quarterly to reflect geopolitical events. The VAPOR model (Figure A4.1) covers six political risk perils across eleven industry types in over 160 countries.



**Figure A4.1** Schematic of VAPOR model.

As with most classic catastrophe models, Oxford Analytica's assessments provide several key inputs as described below.

### A4.1 Frequency assessment

Frequency assesses how often a major risk contingency will have a material impact on a particular industry, operating in a given jurisdiction. This exercise involves both historical analysis and a non-linear assessment of the outlook for similar risk events over the time horizon in question.

VAPOR frequency metrics are necessarily calculated using a *threshold assessment*. Even the best model cannot be relied upon to predict every minor contingency that may affect the bottom line for businesses in a particular sector. By focusing only on severe events that have a lasting, material impact on business conditions, the VAPOR model can be more accurate in its probabilistic assessments of the potential cost of political risk events to a business over time. For example, peaceful protest movements that have limited economic effects would not 'trigger' the model – but mass demonstrations that block mining activity, would do so.

## A4.2 Vulnerability assessment

Oxford Analytica feeds the model with a vulnerability assessment, a historically derived assessment of business losses experienced in the face of certain kinds of severe political risks. For example, expropriation events tend to generate exceptionally high losses, which often amount to the full value of the investment and expected future earnings. On the other hand, some industries can be relatively resilient in the face of capital controls.

## A4.3 Confidence assessment

The forecasts are finally calibrated through the confidence assessment, asking whether the society in question is subject to any potential foreseeable contingencies that might alter political risk conditions. For example, if a country is facing an election that might bring a resource nationalist party to power, the team might reduce its confidence assessment regarding political risks confronting the mining or oil and gas sectors.

Confidence shifts are expressed in the VAPOR model by widening the upper and lower bands of expected dollar-value losses over time, and increasing the upper and lower range of the probable maximum loss estimate.

The research that feeds all three of these assessments takes account of the historical experience of the society or industry in question, and then makes judgments about whether such trends are likely to persist. Past is not necessarily prologue in political risk, so a simple assessment of the historical trend – or of current conditions – would often prove deceptive.

## A4.4 Available GPE partner country political violence (PV) risk index trend

Listed below are available political violence risk index trend data out of 100.

Country	PV Risk
Bangladesh	83
Congo, Dem. Rep.	78
Cote d'Ivoire	58
Dominican Republic	32
Egypt	69
Ghana	38
India	58
Indonesia	66
Kenya	55
Myanmar	42
Nigeria	66

Pakistan	65
Philippines	44
Senegal	35
Tanzania	48
Ukraine	47
Uzbekistan	43
Vietnam	42
Zambia	62
Zimbabwe	58

**Table A4.1** Available GPE partner country PV risk index trend, out of 100.

### A4.5 “Heat map” of exposures



**Figure A4.2** Heat map of exposures.



## A4.6 Country level view of expected loss

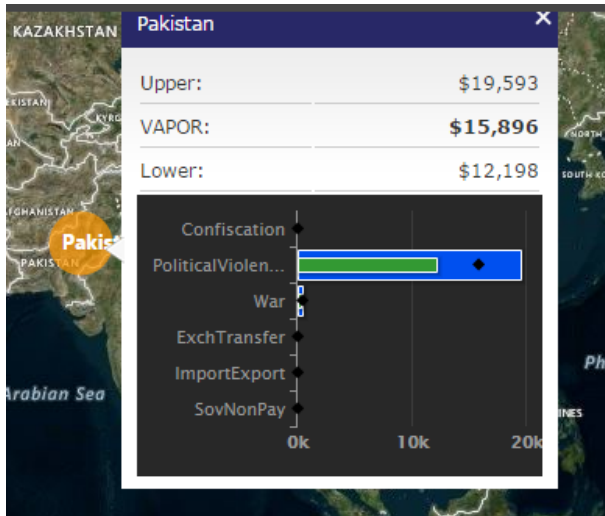


Figure A4.3 Pakistan view of expected loss.

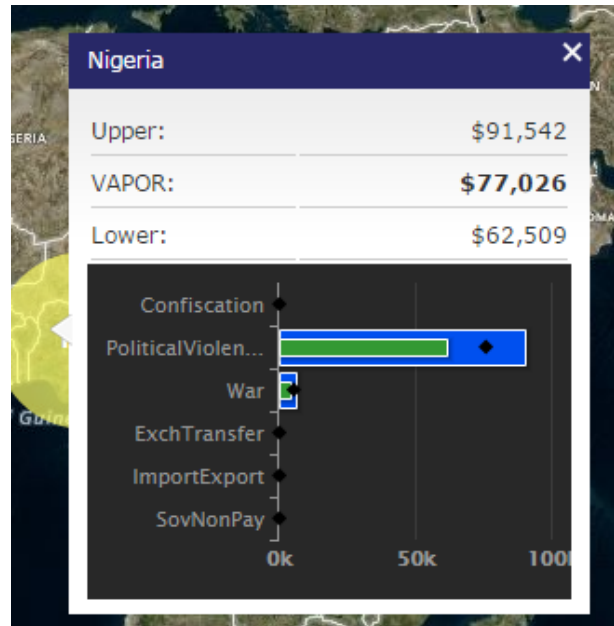


Figure A4.5 Nigeria view of expected loss.

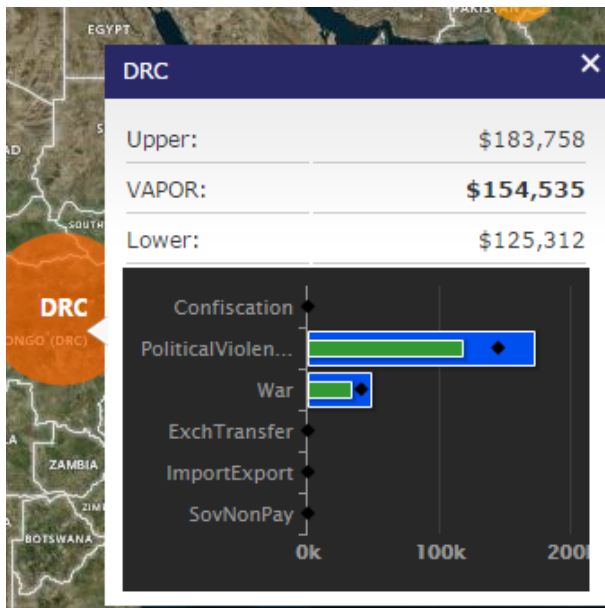


Figure A4.4 Democratic Republic of Congo view of expected loss.

## A4.7 VAPOR losses

### A4.7.1 VAPOR I

Across all the possible futures, the average amount that an institution may lose is called the annual 'expected loss' or VAPOR I.

VAPOR I Expected Loss	
Country	ALL
Year	1
Lower	\$200,019
VAPOR	\$247,457
Upper	\$294,893

**Figure A4.6** Vapor I expected loss

### A4.7.2 VAPOR II

Looking at the most unfavorable of these possible futures, a high estimate for the amount that an institution may lose is called the ‘probable maximum loss’ or VAPOR II.

VAPOR II Portfolio PML	
Year	1
99%	\$2,708,263
99.5%	\$3,021,084
99.9%	\$3,802,260

**Figure A4.7** Vapor II expected loss

### A4.7.3 VAPOR output examples

Country and Peril	Expected loss
DRC Political Violence	\$ 144,404
Nigeria Political Violence	\$ 75,674
DRC War	\$ 40,523
Pakistan Political Violence	\$ 15,790
Nigeria War	\$ 5,405
Pakistan War	\$ 422

**Figure A4.8** Vapor output examples