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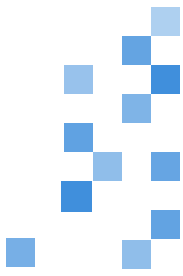
DISASTER PROPERTY INSURANCE IN UZBEKISTAN: OVERVIEW AND RECOMMENDATIONS



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ABBREVIATIONS

ADO	Adobe
AFAD	Disaster and Emergency Management Presidency *(Afet ve Acil Durum Yönetimi Başkanlığı)*
CAT Bond	Catastrophe Bond
CRESTA	Catastrophe Risk Evaluation and Standardising Target Accumulations
EQC	Earthquake Commission of New Zealand
ERIK	Enhancing Resilience in Kyrgyzstan
FLEXA	Fire, Lightning, Explosion, and Aircraft Damage
GDP	Gross Domestic Product
GFDRR	Global Facility for Disaster Reduction and Recovery
GLOF	Glacial Lake Outburst Flood
GoU	Government of Uzbekistan
GWP	Gross Written Premium
IT	Information Technology
MoF	Ministry of Finance
PAID	Romania Insurance Pool against Natural Disasters
PML	Probable Maximum Loss
SIO	State Insurance Organization
TCIP/DASK	Turkish Catastrophe Insurance Pool
UNSAR	National Union of Insurance and Reinsurance Societies in Romania
URM	Unreinforced Masonry

EXECUTIVE SUMMARY

This report was prepared at the request of the Ministry of Finance (MoF) and Ministry of Emergency Situations of Uzbekistan as of February 2019. It aims to provide a detailed overview of the current status of disaster insurance for residential property in the country, identify gaps and provide recommendations for a way forward. The MoF supported preparation of this report through collecting data from 24 local insurance companies and providing comments on the draft report.

Uzbekistan is prone to many natural disasters that have a devastating potential for the economy and the population. In 1966, the Tashkent earthquake leveled the city to the ground, causing US$300 million losses (equivalent to US$10 billion today). Since then the value of assets at risk and population living in disaster-prone areas increased significantly. Uzbekistan also faces more frequent, but less destructive disasters that devastate people's livelihoods. Impact of disasters in the country is amplified by its high financial and physical vulnerabilities, including poor seismic construction quality in the country.

It is widely recognized that disaster insurance can reduce the fiscal impact of natural disasters as well as their adverse economic impact on the population; and lead to a faster post-disaster recovery. The Government of Uzbekistan (GoU) recognizes insurance as an important instrument for a comprehensive protection of the population against natural disasters. Strengthening insurance market is, therefore, among the priorities. Against this background, it is increasingly important to select a comprehensive and systematic approach to strengthening disaster insurance.

For this, several gaps have to be addressed. Disaster insurance in Uzbekistan is offered by the private insurers. It is not subject to specific local regulations and is regulated by general insurance legal frameworks. It is offered primarily in the form of a multi-peril product that bundles together FLEXA (fire, lightning, explosion, and aircraft damage) and catastrophe perils. The coverage offered varies across the insurers. Risk management practices and level of reinsurance protection also differ considerably from company to company. The premium rates for insurance are affordable for the population but might be too small for acquiring sufficient reinsurance coverage and ensuring adequate risk management by companies, considering multiple perils covered and often no deductible included in the coverage.

Insurance penetration currently stands at 10 percent of households, which is a considerable result for a voluntary insurance market without any government enforcement mechanisms. Yet it also means that the remaining uninsured homeowners will require financial support from the GoU in case of a major disaster. If such support is provided (and especially if it turns out to be larger than the average insurance payout), it would harm the development of the nascent insurance market by providing perverse incentives to the public not to purchase insurance in the future. Furthermore, given the low levels of reinsurance coverage observed in the market there is considerable uncertainty with regard to the ability of companies to pay claims in full in case of a major natural disaster in the country.

The GoU could consider the following actions to further strengthen disaster insurance:

- Establish a centralized disaster insurance national pool in the form of a public-private partnership.
- Improve regulatory framework for disaster insurance.
- Strengthen the insurance supervision of the disaster insurance market and introduce adequate reporting of catastrophe risk accumulations retained by insurance companies.
- Invest in better risk information systems.

The report is structured in three main parts. The first part provides an overview of Uzbekistan disaster profile and buildings' seismic vulnerability based on a risk assessment performed for the Kyrgyz Republic. The second part provides an overview of the local insurance market, disaster insurance line of business and analyzes the current gaps in coverage and regulation. It also provides recommendations on how to address them with the view to establishing an effective disaster insurance program. The third part reviews four examples of disaster insurance programs from the Kyrgyz Republic, Romania, Turkey and New Zealand.

BACKGROUND AND DISASTER PROFILE

Uzbekistan is the most populous country in Central Asia with almost 33 million inhabitants as of 2018. In 2017, gross domestic product (GDP) of Uzbekistan was US$49 billion (decreasing from US$67 billion in 2016). In terms of the GDP composition, industry was contributing 30.1 percent (includes oil and natural gas, metals, machinery and equipment, textiles and chemical products) and agriculture, 17 percent to GDP. GDP per capita in Uzbekistan was estimated at US$1,504 in 2017. The same year, poverty was estimated at 12.4 percent of the population decreasing slightly from 12.5 percent in 2016.[1] Over half of the Uzbek population lives in urban areas.

The country is prone to many natural disasters, such as earthquakes, floods, landslide, droughts and others. These disasters can cause significant economic losses. It was estimated that the expected annual economic loss from natural disasters in Uzbekistan is US$92 million (in absolute terms, it is the highest in Central Asia) or 0.20 percent of GDP.

Earthquakes in Uzbekistan are among the major threats. Seismic risks are concentrated in the northeast Tashkent region and the Bukhara region in the southwest of the country. Although only 14.6 percent of the Uzbek territory is at very high seismic risk, almost 50 percent of the population lives in this area.[3] Further, about 65.5 percent of GDP is earned in this area.[4] The capital of Uzbekistan – Tashkent – ranks first among nine largest cities of Central Asia and Caucasus in terms of earthquake hazard and the percentage of population exposed to seismic risk.[5] At the same time, Tashkent is a home to about 7.4 percent of the total population of Uzbekistan. From 1955 to 2000, earthquakes with magnitude > 5.0 happened 81 times in Uzbekistan.[6]

Earthquakes can cause considerable economic losses. For instance, the Tashkent earthquake of 1966 caused damages of about US$300 million.[7] If adjusted for inflation in dollar terms for 2019, this loss would be equivalent to over US$10 billion.[8] An equivalent of this earthquake today, is likely to cause even a larger impact due to the considerable increase in the value of assets at risk in the city.

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[1] World Bank Country Data: Uzbekistan.

[2] World Bank, UN ISDR, CAREC, Mitigating the Adverse Financial Effects of Natural Hazards on the Economies of Central Asia: A Study of Catastrophe Risk Financing Options, 2009, https://www.unisdr.org/files/11742_MitigatingtheAdverseFinancialEffect.pdf.

[3] World Bank, UN ISDR, CAREC, Central Asia and Caucasus Disaster Risk Management Initiative (CAC DRMI): Risk Assessment for Central Asia and Caucasus Desk Study Review, 2009.

[4] Rashidov T.P. Providing seismic safety in Uzbekistan, 2010 – 592 p.

[5] UNISDR, World Bank, CAREC, Central Asia and Caucasus Disaster, Risk Management Initiative (CAC DRMI).

[6] Mavlyanova N., Inagamov R., Rakhmatullaev H., Tolipova N., Seismic Code of Uzbekistan, 2004.

[7] World Bank, UN ISDR, CAREC, Mitigating the Adverse Financial Effects of Natural Hazards on the Economies of Central Asia: A Study of Catastrophe Risk Financing Options, 2009, https://www.unisdr.org/files/11742_MitigatingtheAdverseFinancialEffect.pdf.

[8] Estimated based on 2008 economic damage data (US$2 billion) using World Bank GDP deflator data.

The table below provides an overview of major earthquakes in Uzbekistan.[9,10]

Table 1. Major recorded earthquakes in Uzbekistan

Year	Economic damages and affected population
1902	Destroyed over 40,000 houses and killed more than 4,500 people
1966	Killed 10 people, injured 10,000 and destroyed 28,000 of the city's buildings (including 200 hospitals and clinics, and 180 schools), leaving more than 100,000 people homeless, economic damage of US$300 million
1976 and 1984	Sizeable economic damage, unclear extent
2011	13 killed and sizeable economic damage, unclear extent

Floods are also a frequent natural phenomenon in Uzbekistan. Commonly they are caused by snowmelt, severe storms, or by mountain lakes breaking their banks.[11] Mudflows represent another threat. On an annual basis there are around 22 flash floods and mudflows per year, formed mostly on the slopes of the Chirchik and Ahangaran river valleys, and in Surkhandarya. The high-risk areas account for about 12 percent of the country territory and pose risk to around 16 percent of its population.[12]

According to the Uzbek hydromet, the country is threatened with 271 potential glacial lake outburst floods (GLOFs), most of which are located outside its borders. The largest transboundary GLOF hazard—Lake Sarez—was created by a seismic-triggered landslide in 1911 in Tajikistan. The resulting Usoy dam holds around 16 km^3 of water.[13] If the dam were to collapse, it would affect about 5 million people living in Tajikistan, Afghanistan, Uzbekistan and Turkmenistan.[14]

Uzbekistan also faces the risk of landslides that cause 10-12 percent of the total damage from natural disasters. 90,000 km^2 of the country is covered with mountains which are home to about 3 million people. 17 percent of this area is prone to landslides. About 65-70 percent of all landslides is triggered by snow melting, precipitation, underground waters; 20-25 percent is triggered by earthquakes; and 15-20 percent is caused by technogenic factors (that is, new landslide sites can be formed when new roads are constructed).[15] In May 1991, a landslide in the Angren region killed 50 people. A landslide in January 1992 affected 400 persons.[16]

VULNERABILITY OF RESIDENTIAL PROPERTY TO EARTHQUAKES

In an event of an earthquake in Uzbekistan, buildings can be damaged by such factors as ground shaking, landslide, rock fall or avalanche, soil liquefaction, and surface faulting. Construction practices usually do not fully account for these impacts and there are many structural vulnerabilities. These structural vulnerabilities manifest themselves in the lack of ductility (that is, ductile design means failure is gradual and controlled rather than sudden, like in unreinforced masonry [URM] buildings); lack of redundancy (redundant load paths

[9] Juliev M., Hubl J., Pulatov A., Natural hazards in mountain regions of Uzbekistan: A review of mass movement processes in Tashkent province, International Journal of Scientific and Engineering Research, March 2017, https://goo.gl/U5nLBU.

[10] World Bank, Central Asia Earthquake Risk Reduction Forum: Forum Proceedings, 2015, http://pubdocs.worldbank.org/en/451453873709673/Central-Asia-Earthquake-Risk-Reduction-Forum-Proceedings-2015-eng.pdf.

[11] European Commission, Disaster risk reduction in Uzbekistan, 2016 https://eeas.europa.eu/delegations/uzbekistan_en/12425/Disaster%20risk%20reduction%20in%20Uzbekistan.

[12] United Nations Development Programme, Natural Disaster Risks in Central Asia: a Synthesis, 2011.

[13] Ibid.

[14] World Bank, Lake Sarez Mitigation Project, 2000, http://documents.worldbank.org/curated/en/900431468778506744/pdf/multi-page.pdf.

[15] Juliev M., Hubl J., Pulatov A., Natural hazards in mountain regions of Uzbekistan: A review of mass movement processes in Tashkent province, International Journal of Scientific and Engineering Research, March 2017.

[16] UNISDR, World Bank, CAREC, Central Asia and Caucasus Disaster, Risk Management Initiative (CAC DRMI).

and multiple elements to resist lateral loads); lack of tying (ability of different building elements to transfer the earthquake loads); poor quality materials; damage from past events; material deterioration from age, lack of maintenance, unauthorized building modifications; or irregular building plans.[17]

The below tables summarize vulnerabilities for two types of buildings, as recorded for the Kyrgyz Republic, but relevant for the whole Central Asia region which has a similar building stock:

Figure 1. Two of the building types and their key deficiencies

GLOBAL	Plan Irregularity – slender in plan
LOAD PATH & DETAILING	Potential deterioration in panel joints (wall panels to wall panels and wall panels to floors) due to lack of maintenance. Potential issues with quality of construction of panel joints.
DIAPHRAGMS	None
FOUNDATIONS	None
NON-STRUCTURAL	Out-of-plane failure of internal unreinforced masonry walls. Tall, narrow contents (shelves) may overturn. Lighting, services are unrestrained.

GLOBAL	Lack of global strength. Plan irregularity – slender in plan. Vertical irregularity (discontinuous internal masonry walls)
LOAD PATH & DETAILING	Inadequate connection between diaphragms and walls to transfer lateral loads.
DIAPHRAGMS	Inadequate diaphragms to transfer lateral loads – precast slabs lack topping slab.
FOUNDATIONS	Foundations may require strengthening locally.
NON-STRUCTURAL	Out-of-plane failure of internal unreinforced masonry walls. Tall, narrow contents (shelves) may overturn. Lighting, services are unrestrained.

Source: Case study of the Kyrgyz Republic.

In Tashkent, it was estimated that about 43 percent of the inhabitants live in buildings that were not adequately designed and constructed to meet the current standards for seismic resistance.[18] While there was no seismic risk assessment for residential property for Uzbekistan available for this report, such an assessment was recently conducted for the Kyrgyz Republic. Historical similarities in the construction make

[17] World Bank, Measuring Seismic Risk in Kyrgyz Republic: Seismic Risk Reduction Strategy, 2017.

[18] Mavlyanova N., Inagamov R., Rakhmatullaev H., Tolipova N., Seismic Code of Uzbekistan, 2004, http://www.iitk.ac.in/nicee/wcee/article/13_1611.pdf.

it possible to assume a similar behavior for residential buildings in Uzbekistan. This study has identified types of vulnerable buildings and estimated their potential for failure and ensuing economic losses and fatalities. These conclusions, however, must be considered with caveats, considering the changes introduced in the Uzbek Building Code and construction practices since the collapse of the Soviet Union. Accounting for such country-specific factors will be essential for drawing more accurate policy conclusions.

The table below presents the results of this assessment for different buildings in the Kyrgyz Republic.

Table 2. Buildings types and vulnerabilities

Description of impact	Examples of building types	
The building types that are expected to contribute the most to economic losses in residential buildings are flat slab pre-cast concrete (RCPC3), reinforced concrete frame with infill masonry walls (RC3), and URM	 Pre-cast Concrete Flat Slab Buildings (RCPC3)	 Reinforced Concrete Frame with Brick Infill Buildings (RC3)
	 Unreinforced Masonry Buildings with Wooden Floors (URM1)	 Unreinforced Masonry Buildings with Reinforced Concrete Floors (URM2)

Description of impact	Examples of building types	
For more severe events, pre-cast panel buildings (RCPC1) and concrete moment frame (RC1) and concrete shear wall buildings (RC4) are also expected to contribute significantly to economic losses.	 Pre-cast Concrete with Large Precast Panels and Monolithic Concrete Joints Buildings (RCPC1)	 Monolithic Cast In-situ Reinforced Concrete Wall Buildings (RC4)
	 Monolithic Reinforced Concrete Frame Buildings (RC1)	
The most fatalities are expected to be associated with damage and potential collapse of URM, reinforced concrete frame with infill masonry walls (RC3) and adobe (ADO).	 Reinforced Concrete Frame with Brick Infill Buildings (RC3)	 Adobe Buildings (ADO)

Given this disaster risk profile and the vulnerability of residential buildings, financial protection of the population against disasters is increasingly important. Availability of extra-budgetary funding immediately after a disaster will ensure a faster and more complete economic and social recovery. It may also reduce government fiscal liabilities occurring due to natural disasters.

OVERVIEW OF DISASTER INSURANCE

Disaster insurance has been recognized among the most effective of financial protection instruments, because it can offer the following significant benefits:

- **Disaster insurance helps reduce the post-disaster funding gap and increases post-disaster funding significantly.** After a disaster, governments face numerous costs, including preserving security, restoring access to public services, financially supporting the victims of disaster, and reconstructing or rehabilitating public and, often private, assets and infrastructure. Some of these costs can be covered from contingency budgets and reallocation from ongoing projects. However, these sources are usually not sufficient to cover even a small fraction of total post-disaster funding needs. For instance, Bulgaria's reserve fund—the second largest of all such funds in Southeastern Europe (US$31 million as of 2008)—can cover only 0.6 percent of damages from an earthquake with a return period of 250 years.[19] To cite another example: in the United States, the average 2011 Federal Emergency Management Authority payout was around US$5,000 while the maximum payout in case of complete property loss was US$30,000.[20] These amounts are much lower than the insured limits offered by the California Earthquake Authority, a U.S. earthquake insurance program, which can be as high as US$200,000. Donor aid can also cover some post-disaster costs, but it is usually insufficient to cover the costs not met by government. For example, following the devastating 2010 earthquake in Haiti, only 2 percent of donor aid came in form of cash grants to the government.[21]

- **The insurance industry can underwrite loss at a scale not feasible for donors and governments.** Donors allocated US$13.8 billion for disasters in 2010, a small amount compared to the US$38 billion in insured losses the insurance industry covered that year. The insurance industry covered much higher losses—US$105 billion—in 2011, mainly because of the Thai floods, but the industry was able to absorb them.[22]

- **Disaster insurance speeds up economic recovery after disasters.** Insurance indemnities are paid out faster than government aid. Disbursement of government funds can be slow, requiring first an emergency decree, a lengthy budget reallocation and then a process to identify and reach the affected households. The speedier disbursement of insurance facilitates faster recovery of the affected population and economy.

Overall, disaster insurance can help mitigate the economic and fiscal impact of natural disasters. A recent report by Standard & Poor's[23] suggests that a 50 percent disaster insurance coverage ratio can reduce by about 40 percent the impact of disasters on a country's growth.

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[19] Gurenko, Eugene N., and Wael Zakout. 2008. "Mitigating the Adverse Financial Effects of Natural Hazards on the Economies of South Eastern Europe: A Study of Disaster Risk Financing Options." South Eastern Europe Disaster Risk Mitigation and Adaptation Program. World Bank, Washington, DC.

[20] Kousky, Carolyn, and Leonard Shabman. 2012. "The Realities of Federal Disaster Aid: The Case of Floods." Issue Brief 12-02, Resources for the Future, April. http://www.rff.org/files/sharepoint/WorkImages/Download/RFF-IB-12-02.pdf.

[21] Cummins, David, and Olivier Mahul. 2009. Catastrophe Risk Financing in Developing Countries: Principles for Public Intervention. Washington, DC: World Bank.

[22] Citing Munich Re at Talbot, Theodore, and Owen Barder. 2016. "Payouts for Perils: Why Disaster Aid Is Broken, and How Catastrophe Insurance Can Help to Fix It." CGD Policy Paper 087, Center for Global Development, Washington, DC.

WHAT DEFINES AN EFFECTIVE DISASTER INSURANCE?

Existing world examples of disaster insurance programs differ from one another; but effective programs have some key characteristics in common, and certain criteria can be used to measure a program's success.

From a **consumer perspective,** criteria for disaster insurance effectiveness include the following:

- *Adequacy of the payout* in comparison to the losses incurred after a disaster.
- *Attractiveness of the product's price*, given what it covers.
- *Quality* and *speed of claims assessment* process.

From a **government perspective**, criteria for disaster insurance effectiveness include the following:

- *Solvency of the disaster insurance program/low credit risk*. Insolvent insurers will not pay any claims, so solvency is key for the success of any program. Government guarantees and/or reinsurance are widely used to ensure solvency of the insurance industry after a large catastrophic event. Adequate regulatory requirement and effective insurance supervision are essential to prevent massive insurance insolvencies after a major natural disaster.
- *Penetration*. Penetration can remain low if the product is voluntary but unattractive (as, for instance, in California) or simply is not in demand due to the expectation of post-disaster government compensation.
- *Financial responsibility of the government*. Most programs require government support to offer affordable and high-quality products, but most effective support for such programs typically comes in the form of adequate legal frameworks that can ensure high insurance penetration and fiscal support in excess of commercial reinsurance as a measure of funding of last resort in case of highly unlikely very severe catastrophic events.

From a **business perspective,** criteria for disaster insurance effectiveness include the following:

- *Ability to avoid adverse selection*, fraud and high concentration of risk.
- *Ability to secure mass participation* in the program and its continuous growth.
- *Ability of insurers to charge actuarially sound insurance rates* for the cover that would cover administrative costs, costs of capital and reinsurance, and at least a small profit.

These criteria can be difficult to meet even in highly developed market economies. In New Zealand, for instance, due to the inadequate premium rate charged to its clients, Earthquake Commission of New Zealand (EQC)—the national compulsory disaster insurance program—had been collecting premiums for 60 years, but after a series of Canterbury earthquakes over 2010 and 2011—after paying out all its accumulated surplus and exhausting its reinsurance, it had to request additional financial assistance from the government.

[23] 2015, cited in oy, Ilan, Aditya Kusuma, and Cuong Nguyen. 2017. "Insuring Disasters: A Survey of the Economics of Insurance Programs for Earthquakes and Droughts." Working Paper 6408, Victoria University of Wellington, School of Economics and Finance. https://www.victoria.ac.nz/__data/assets/pdf_file/0004/896845/SEF-WP_11-2017.pdf.

DISASTER INSURANCE IN UZBEKISTAN

OVERVIEW OF THE INSURANCE MARKET

From January 1, 2020, the insurance industry in Uzbekistan is supervised by the newly established Agency for Insurance Development under the Ministry of Finance (MoF), which replaced the State Insurance Supervision Department under the MoF.

Insurance companies and professional services. According to the MoF, in 2018, there was 30 licensed insurance companies in Uzbekistan (6 of them are life insurance companies). These companies had 1451 branches (growing from 1284 in 2017; 1048 in 2014; 465 in 2007)[24] . Over the recent years, insurance market has seen a number of improvements in terms of professional insurance services. The MoF reported significant increase of companies providing professional insurance-related services, such as claim adjusters and surveyors (24 company), actuaries (4 companies), brokers (3 companies) that employ overall about 5,500 staff in 2017.[25]

Size of the market and premium per capita. The Uzbekistan insurance market remains relatively small, with a low premium expenditure per capita and an insurance, culture which is still nascent. In 2018, gross written premium (GWP) reported by the MoF increased to 1,635.2 billion soms (US$ 202.6 million) from 927.4 billion soms (or US$ 180.4) in 2017. In Central Asia, Uzbekistan is the second largest insurance market after Kazakhstan. Insurance consumption per capita in 2017 was US$ 5.68[26] increasing from US$2 in 2007, but remaining small if compared to emerging markets average of US$135 in 2015.[27] (In comparison, premium per capita in Russia was US$152,[28] in Kazakhstan – US$73.76 in 2017[29])

Insurance penetration as reported by AXCO was at 0.37 percent of GDP,[30] which is low compared with the global average of 6.9 percent of GDP and emerging markets average of 3.0 percent of GDP[31] as reported by the Asian Development Bank.

The MoF reports gross insurance liabilities in 2018 as 599.86 trillion soms (about US$ 74 billion), growing 8.5 times since 2010, but decreasing in US$ value since 2017 (about US$ 93 billion)[32] . Total volume of insurance claims paid in 2018 increased to 460.8 billion soms (US$ 57 million) from 269.9 billion soms (US$ 83.9 million) in 2017 and 66.9 billion soms (US$ 20.8 million) in 2013. This is an increase of about 7 times in som value between 2018 and 2013. According to the MoF, in 2018, the increase resulted from the increased payouts for life insurance and in 2017 - from agricultural risks. The market remains highly profitable nevertheless - with the volume of non-life insurance claims paid accounting for only 24.3 percent of GWP.

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[24] Ministry of Finance, Report on regulation and supervision of insurance market in Uzbekistan for 2018, 2019

[25] Ministry of Finance, Report on regulation and supervision of insurance market in Uzbekistan for 2017, 2018, http://insurance.uzreport.uz/files/docs/report2017.pdf

[26] AXCO, Insurance market report: Uzbekistan: non-life (P&C), 2019

[27] XPRIMM, Insurance penetration and density almost unchanged globally year over year; emerging markets gained an increasing share in the global insurance premiums production, 2016, http://www.xprimm.com/Swiss-Re-Insurance-penetration-and-density-almost-unchanged-globally-year-over-year%3B-emerging-markets-gained-an-increasing-share-in-the-global-insurance-premiums-production-articol-1,8-8172.htm.

[28] SWISS RE, World insurance in 2017: solid, but mature life markets weigh on growth, 2018, https://www.segurostv.es/doc/informes/sigma3_2018_en.pdf.

[29] AXCO, Insurance market report: Uzbekistan: non-life (P&C), 2018.

[30] AXCO, Insurance market report: Uzbekistan: non-life (P&C), 2019

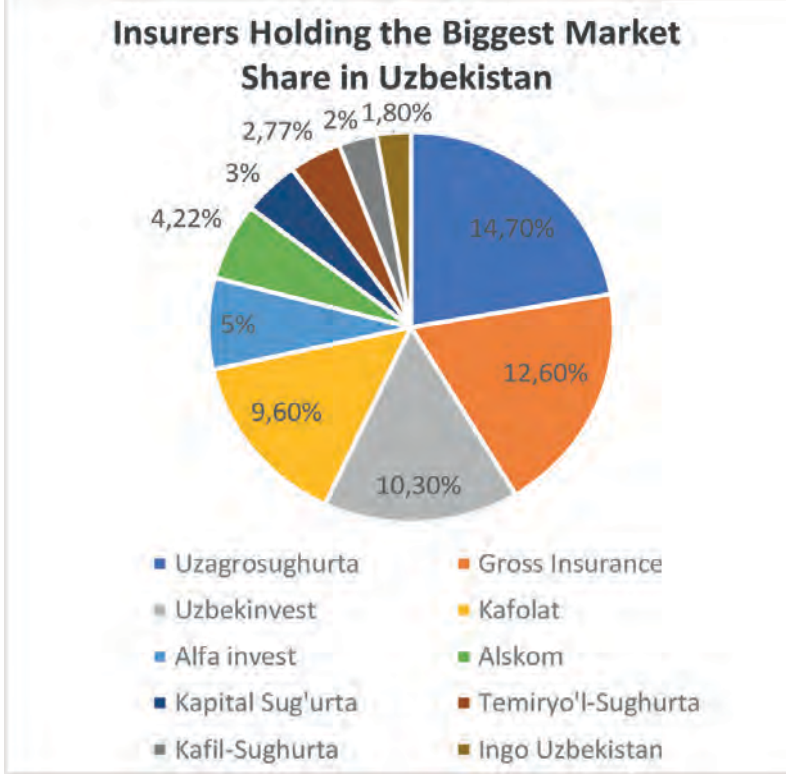
[31] Asian Development Bank, Republic of Uzbekistan: Insurance Sector Development, 2012, https://www.adb.org/sites/default/files/project-document/75049/46112-001-uzb-tar.pdf.

[32] Similar decrease in US$ value is observed for other indicators of the insurance market due to the liberalization of the exchange rate and devaluation of the som in 2017.

Insurance companies and their market share. According to the data provided by the insurers to the MoF for this report, the companies with the biggest market share in non-life insurance market are:

- Uzagrosughurta (14.7 percent)
- Gross Insurance (12.6 percent)
- Uzbekinvest (10.3 percent)
- Kafolat (9.6 percent)
- Alfa invest (5 percent)
- Alskom (4.22 percent)
- Kapital Sug'urta (3 percent)
- Temiryo'l-Sug'urta (2.77 percent)
- Kafil-Sug'urta (2 percent)
- Ingo-Uzbekistan (1.8 percent) (see figure 2)

Figure 2. Insurers with the biggest market share in Uzbekistan



Source: Insurance companies reporting to the MoF.

Three of these companies are state-owned or companies that have a government shareholding – that is, Uzagrosugurta, Uzbekinvest and Kafolat. However, according to the MoF, the role of the state insurancecompanies in the sector has been gradually decreasing – from 40.5 percent in 2013, to 37.2 in 2017 and to 28.4 percent of GWP in 2018.

Market concentration. AXCO reports high concentration of insurance market in Uzbekistan, where the combined market share of the top 10 insurance companies was 82.84 percent of GWP as of 2017. The rest of the companies are small and have less than 2 percent of market share each[33].

Capital requirements, reserves and reinsurance. Following Presidential Decree #PP-618 from 10 April 2007, the minimum capital requirement for non-life insurers is 7.5 billion soms (about US$ 930,000); insurers offering reinsurance – 30 billion soms (US$ 3.7 million). Standard solvency margin for non-life insurers and reinsurers is defined as the highest of the following three amounts: (a) the required minimum capital; (b) a premium calculation based on the written premium for all classes of business for the year less any returned premiums; and (c) a claims calculation based on the claims paid over the preceding 36 months.

According to the MoF, as a result of the increased requirements for minimum statutory capital, the total capital of the insurance companies in Uzbekistan in 2018 was 543 billion soms - a 69 percent increase compared to 2017 if considered in local currency. If considered in US$, the total capital in 2018 was 1.5 times lower than in 2017 (decreasing from US$ 100 to 67.3 million). Investments of the insurance companies in Uzbekistan are primarily in low-risk low return bank deposits (51.8 percent) and securities (35.2 percent).

According to AXCO, the majority of insurance companies are profitable.[34] AXCO reports that in 2017 the non-life insurance market contracted by 27.80 percent in US$ terms with the liberalization of the exchange rate and devaluation of the som, however, the disruption has been subsiding. This removed the previous limitations on reinsurance purchase. However, AXCO reports that most business is retained in the local market either with the direct insurers or through locally placed reinsurance. Only few insurers have reinsurance treaties of any sort. Excess of loss and catastrophe reinsurance covers are not widely used. In addition, AXCO reports that the insurance companies in Uzbekistan do not monitor their earthquake accumulations and thus are not aware of probable maximum losses (PMLs) to their risk portfolio for selected return periods. The demand for reinsurance, however, may grow with the easier access to international reinsurance markets.

Until 2020, there was no central fund to compensate policyholders in the event of insurer insolvency, except for compulsory motor third party liability claims. Such a fund was established as of January 1, 2020 but has not been yet operationalized.

DISASTER INSURANCE

The decree of the Cabinet of Ministers of Uzbekistan[35] lists disaster insurance among the classes of insurance provided in the country. The law provides a classification of insurance products, which includes insurance against fire and natural disasters.

Insurance policy and limit. Multi-peril disaster insurance for residential property is offered by non-life insurance companies operating in Uzbekistan. The typical local property insurance coverage includes most of the FLEXA[36] perils and additional catastrophic perils. One insurer offers a separate disaster cover for commercial property (Uzagrosughurta) and several offer a separate cover for all the property (Uzbekinvest, TEMIRYO'L-SUG'URTA, Ingo-Uzbekistan, Gross Insurance, Global Insurance Group). Most of the reported policies are sold as a multi-peril cover.

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[33] AXCO, Insurance market report: Uzbekistan: non-life (P&C), 2019

[34] AXCO, Insurance market report: Uzbekistan: non-life (P&C), 2019.

[35] According to an attachment #1 to the decree #413 of the Cabinet of Ministers of Uzbekistan On licensing of insurance business of insurers and insurance brokers, 2002 (RUS: О лицензировании страховой деятельности страховщиков и страховых брокеров", Приложение №1 к Постановлению Кабинета Министров Республики Узбекистан от 27 ноября 2002 года № 413), http://insurance.uzreport.uz/cgi-bin/main.cgi?raz=9&lan=r.

[36] Fire, lightning, explosion, and aircraft damage.

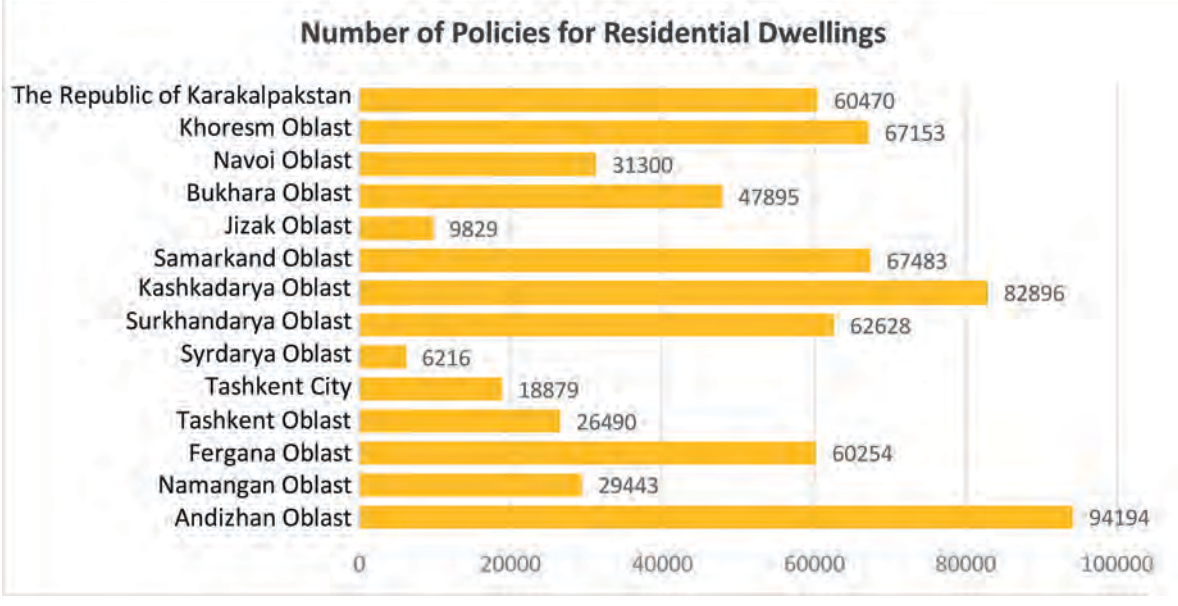
Insurance policies typically cover property up to its actual value on the date of conclusion of the contract or replacement costs in case of the destruction of property, but no more than the insured limited. Replacement costs include:

- expenses for supplies and spare parts for repair (restoration);
- expenses for repair work;
- expenses for delivery of supplies to the repair site necessary to restore the insured property to its original state prior to occurrence of a catastrophic event.[37]

Cover limits differs by insurance company. For instance, Uzagrosughurta offers a maximum cover of about US$6,400 for an apartment and US$10,600 for a house. Gross Insurance offers any desired coverage limit, with a premium discount for the higher insured limit.[38]

Penetration. According to the information provided for this report, as of 2019, about 10 percent of residential dwellings are insured against FLEXA risks and natural perils. The companies reported 665,130 residential property insurance policies (see figure 3).[39] Residential insurance accounts for about 20 percent of companies' overall risk exposure, with the remaining 80 percent falling on industrial and commercial risks. According to the MoF, the insurance penetration is driven primarily by mortgage-linked insurance (where insurance is required by law). AXCO further reports the following penetration drivers: (a) insurance of items taken as loan pledges; (b) insurance of leased equipment; and (c) insurance of property offered as security (to pawnbrokers).[40] Mortgage-linked insurance contracts are often offered for multiple years. As can be seen from figure 3 below, the largest number of insured homes are in the Andijan oblast, followed by Kashkadriinskaya and Samarkand oblasts.

Figure 3. Number of residential disaster insurance policies by oblast



Source: Insurance companies reporting to the MoF.

[37] As provided by the website of Uzbekinvest.

[38] As provided by these companies' websites.

[39] Total population as of 2018: 32,955,400 (World Bank data); average household size: 5.2 person.

[40] AXCO, Insurance market report: Uzbekistan: non-life (P&C), 2018.

Figure 4. Seismic map of Uzbekistan with delineation of regions

Source: Government of Uzbekistan

Note: Delineation of regions is based on publicly available data.

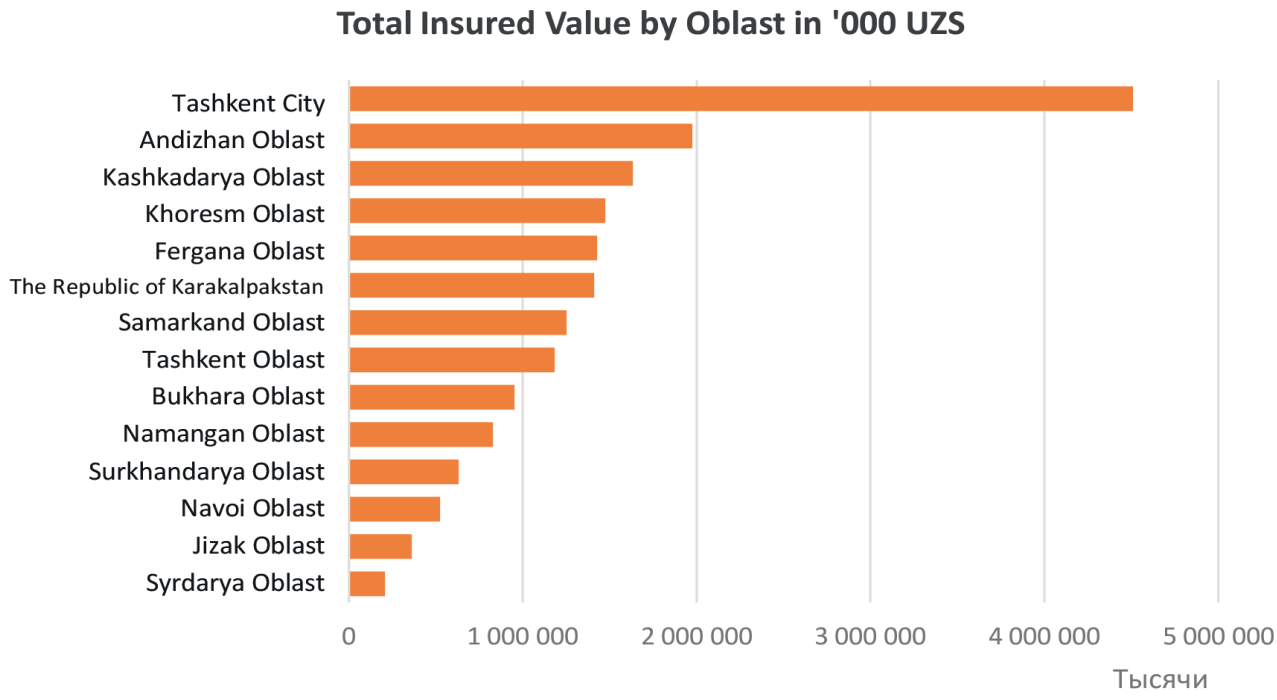
Premium pricing. According to the MoF, insurance premiums are not regulated. In case of 9 out of 24 insurers, the reported average premiums are US$78 per insurance policy. Most companies reported that premiums vary across the country. Discounts on premiums can be granted with purchasing the multi-year coverage or a higher limit policy.

7 companies indicated to have a deductible, ranging from 1 to 2 percent of the insured sum. 10 companies indicated that they do not apply deductible.

Companies that sell most of the disaster insurance include:

- Uzagrosughurta - 467,625
- Uzbekinvest - 62,921
- KAFIL-SUG'URTA - 52,882
- Kafolat - 28,278
- GROSS INSURANCE - 17,071

Figure 5. Total insured value by oblast



Source: Insurance companies reporting to the MoF.

Claims-paying capacity. Total insured value for residential property in Tashkent and Tashkent oblast is around US$703 million,[41,42] which is a large amount relative to the overall capital of the insurers. The surplus capital of individual insurers was on average US$4.5 million, varying from about US$920,000 for the smallest company to US$60 million for the largest.[43,44] Some companies indicated that they bought reinsurance. Only four companies indicated that they have been purchasing reinsurance for residential property portfolios, while seven companies did so only for industrial and commercial property. For instance, Uzbekinvest reported purchasing reinsurance for large commercial risks on the excess of loss basis, although the data on reinsurance was not reported by the company. The coverage was acquired through facultative reinsurance.

Large catastrophe risk retentions by insurers are especially an issue considering that Uzbekistan is a disaster-prone country and most of insurers' earthquake risk accumulations are in Tashkent and Tashkent oblast (30 percent of the reported liabilities only for residential property) (see figure 5), which are prone to significant highly correlated seismic risk (see seismic map on figure 4).

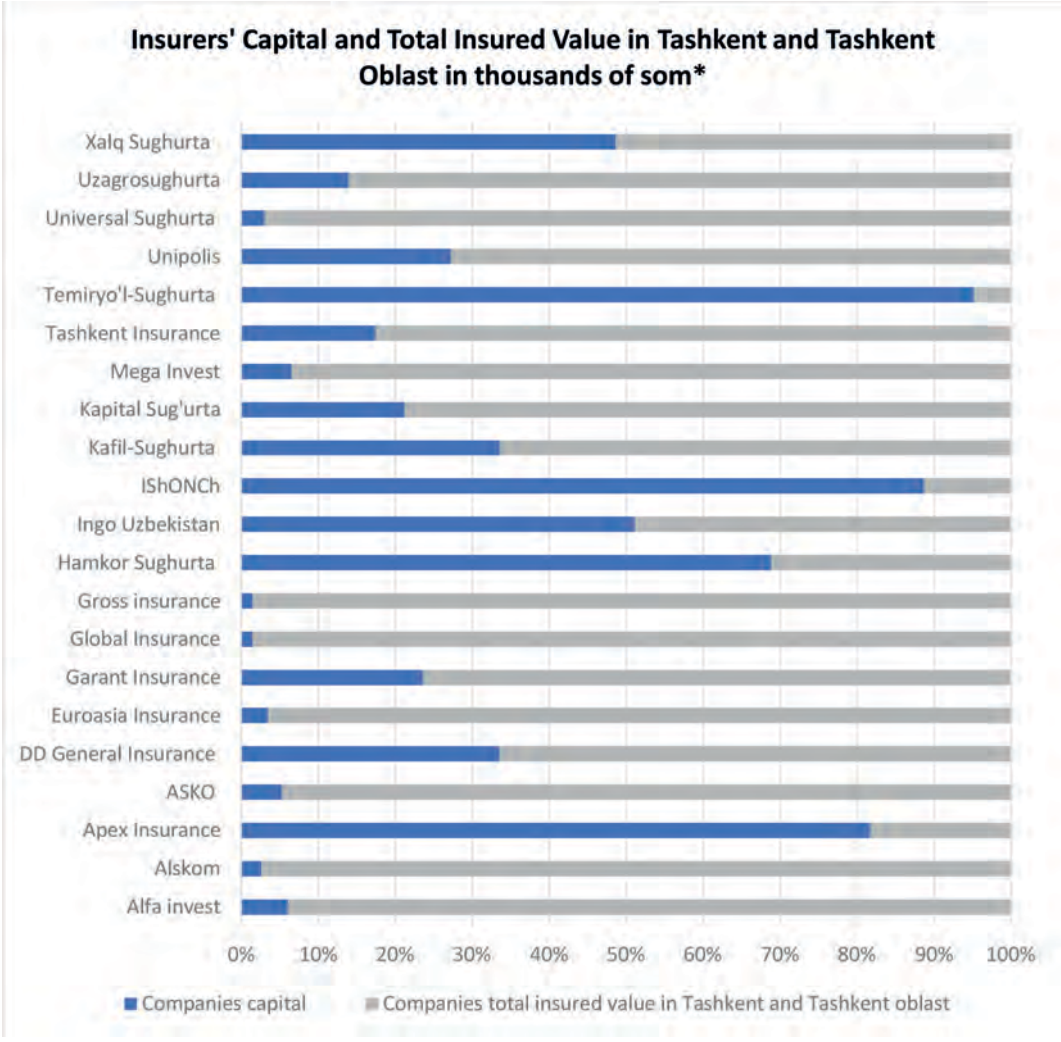
[41] Two companies have submitted data that required further confirmation as too many policies were reported to be sold compared to these companies' market share: e.g. one company reported over US$ 850 million exposure country wide but has a market share of 0.5 percent. Another company also reported similarly. Such companies' data entries were divided by 1000, assuming the data have not been submitted in '000.

[42] Insurance companies in Uzbekistan has a total exposure of US$7.3 billion in Tashkent and Tashkent oblast (with US$6.5 billion located in Tashkent) or about 8 percent of their gross insurance liabilities.

[43] As reported on the website of Uzbekinvest.

[44] 5 companies have not reported their capital, for four companies out of these, information on capital was available online (for example, Uzbekinvest).

Figure 6. Insurers own capital (blue bars) as percentage of their exposure on disaster insurance for residential property in Tashkent and Tashkent oblast (grey bars)



Source: Insurance companies reporting to the MoF.

Note: *excluding companies not reported their capital.

Based on a seismic risk assessment conducted for Almaty, Kazakhstan, it is possible to assume two scenarios – one for an earthquake with a PML of 5 percent for a 100 year return period and the other – an earthquake with a PML of 10 percent for a major 200-year return period earthquake, affecting Tashkent and the Tashkent oblast at the same time. Given the insurers' capital and the reported external reinsurance capacity, out of 24 companies, 5 companies would become insolvent in the first scenario and 8 companies in the second one only due to losses to the insured residential property.[45] Furthermore, as the capital of the companies is not liquid, many of remaining technically solvent insurers will be unable to pay claims due to the lack of sufficient liquidity of their assets. Among the biggest companies, Gross Insurance appears to be particularly vulnerable to a potential insolvency in case of a major earthquake.

[45] Both assumptions are based on risk assessment conducted for Almaty and are only proxy estimates for an actual exposure in Tashkent and Tashkent oblast, which are exposure to high seismic threat.

Unfortunately, given the scarce reporting by the companies about their reinsurance arrangements and even about their own surplus capital, it is impossible to guess which companies are particularly at risk.

Risk management. Almost 60 percent of all earthquake policies are concentrated in high-risk areas, however less than half of all 24 companies indicated to collect relevant risk accumulation data for their disaster insurance policies. For instance, only 11 companies collect relevant data on insured disaster risks in the regions and the occupancy class of the insured buildings, 8 on building type, only 9 reported to collect data on insured amounts separately for the dwelling and its contents. Only one company – Uzbekinvest - reported to use an automated system for controlling risk accumulations.

CONCLUSIONS ON DISASTER INSURANCE IN UZBEKISTAN

Currently, there are no specific insurance regulations for disaster insurance in Uzbekistan, which results in excessive risk retentions by local insurers. In turn, this endangers the solvency and stability of the entire insurance market. Below is a brief overview of the main drawbacks of the current arrangement against the key criteria relevant for the main system stakeholders—policyholders, government, and insurance companies.

From a **policyholder's perspective:**

- *Adequacy of insurance payouts in case of a major natural disaster* - given excessive risk retentions by local insurers and almost non-existent external reinsurance capacity, it is unlikely that policyholders will be indemnified in full in case of a major earthquake.
- *Attractiveness of the product's price* - given the fierce unregulated competition on price, premiums rates are highly affordable, and deductibles are close to zero, which is attractive for consumers.
- *Quality and speed of claims assessment* process - the claims management capabilities of local insurers in case of major natural disaster remain unclear and would require a special in-depth research. For example, Gross Insurance indicated that it would need 10 days to process a claim after all relevant documents will have been submitted. However, collecting relevant documents in case of a major disaster may be a challenge, with the insurers' capacity to simultaneously process thousands of claims put to a serious test.

From a **government perspective:**

- *Solvency of the disaster insurance program/low credit risk.* Several insurers in Uzbekistan could become insolvent following a large earthquake due to the limited own claim paying capacity and virtually non-existent reinsurance coverage. As residential property accounts for 20 percent of the total market risk property exposure, this may necessitate a government bailout of policyholders of failed insurance companies. In addition, in case of several state-owned insurers, commercial and industrial clients are likely to be compensated as well by the government to avoid a major reputational damage and the economic disruption.
- Insurance penetration. Currently, the penetration is at 10 percent countrywide, which is a good achievement for a voluntary market-based insurance supported only by limited commercial enforcement (that is, bundling of insurance with mortgage loans). However, the penetration is still very low to adequately address the post-disaster compensation needs of all affected homeowners. This makes the need for massive government post-disaster fiscal outlays almost certain. In case of massive financial support by the government, the population will be discouraged from purchasing insurance for many years to come.

- *Financial responsibility of the government*. Several state-owned insurers in Uzbekistan operate without adequate reinsurance coverage and thus may incur large liabilities for the government budget. At the same time, uninsured population is likely to require government support.

From an insurer's perspective:

- *Premium rates for natural perils appear to be very low* and not reflective of the cost of seismic risk. In the absence of proper insurance regulations and market supervision, insurers will continue being engaged in unsustainable competition on the price of catastrophe insurance coverage, which leaves little premium for acquiring reinsurance, paying administrative costs and ensuring minimum profitability and market growth.
- *In the absence of compulsory insurance insurers cannot* prevent adverse selection and are bound to have rather unbalanced insurance portfolios.

RECOMMENDATIONS FOR THE GOVERNMENT OF UZBEKISTAN ON STRENGTHENING DISASTER INSURANCE

To address the above gaps, the Government of Uzbekistan (GoU) should consider the following policy actions:

- **Establish a centralized disaster insurance national pool in a form of a public-private partnership**. Establishing a functioning disaster insurance pool is an ambitious task, requiring a political will. Government support will be essential in preparing and enacting a national disaster insurance law that would make disaster insurance compulsory for all homeowners in the country. Moreover, to be effective, the law should be accompanied by its vigorous enforcement. Such programs have been established with the World Bank assistance in Turkey, Romania and recently in the neighboring Kyrgyz Republic. It is recommended that the pool is established as a public-private partnership between the local insurers and the government. It should also extensively rely on foreign reinsurance to ensure adequate reinsurance capacity of the program and consequently its ability to pay claims to the insured in full and on time. (See a summary of the international practices below).
- **Improve regulatory framework for disaster insurance.** The government should consider enacting insurance regulations that would regulate insurers' maximum risk retentions for earthquake risk and minimum reinsurance requirements (including credit quality and minimum required risk transfer to reinsurers). In addition, it is recommended that the government conducts a solvency review of insurers particularly exposed to disaster risk.
- **Strengthen the insurance supervision of the disaster insurance market and introduce adequate reporting of catastrophe risk accumulations retained by insurance companies.** The study demonstrated that several companies might become insolvent in case of a major disaster. At the same time, quality of the information submitted by the insurers and its heterogeneity requires a major improvement. For the supervision authority, it is critical to be able to understand the earthquake risk accumulations of the insurers due their high loss potential that can easily bankrupt the companies and mortgage lenders they were bound to insure. To this effect, we recommend that the government requires insurers to report on a systematic basis their earthquake risk accumulations by Catastrophe Risk Evaluation and Standardising Target Accumulations (CRESTA) zone and the type of property class. In parallel, insurers should provide detailed and up-to-date information about their

reinsurance programs for commercial, industrial and residential properties insured against natural disasters.

- **Invest in better risk information.** Risk information is fundamental for financial decision making. While insurers might not always have enough incentives to study disaster risks, the GoU could fulfill this function. Adequate risk information gives a better understanding of insurers risk exposures, adequacy of premium rates, and provides the basis for transacting with the international reinsurance markets. To this effect, the government may consider investing in developing an Uzbek earthquake risk model and an industry exposure database that can be used by the insurance and reinsurance markets and by the insurance regulator to better manage and supervise catastrophe insurance risk in the country.

INTERNATIONAL CASE STUDIES OF DISASTER INSURANCE PROGRAMS

The below section presents four case studies of disaster insurance programs, including:

- Kyrgyz Republic State Insurance Organization (SIO)
- Romania Insurance Pool against Natural Disasters (PAID)
- Turkish Catastrophe Insurance Pool (TCIP/DASK)
- Earthquake Commission of New Zealand (EQC)

KYRGYZ REPUBLIC SIO

ESTABLISHMENT OF THE SIO

The Kyrgyz Republic is subject to many natural hazards. On average, over 200 emergencies happen every year and cause the country some US$30–35 million in damages and losses.

In 2015, the government issued a law on mandatory insurance of private property against fire and natural disasters #209. For implementing this law and managing the disaster insurance program, the government has established the SIO. Implementation of disaster insurance program is currently support by the World Bank Enhancing Resilience in Kyrgyzstan (ERIK) project.

SIO STRUCTURE

SIO is a public joint stock company, founded by the Public Asset Management Fund of the Government of the Kyrgyz Republic. SIO has over 50 local offices and representatives in all oblasts of the country. SIO also sells policies through banks.

SIO POLICIES

SIO offers flat priced policies with US$9 (som 600) and US$17 (som 1200) premium for rural and urban area. Coverage limit is US$7,200 (som 500,000) and US$14,300 (som 1,000,000) respectively. The policies cover damage to the private house/apartment from fire, earthquake, intrusion of water as a result of fire suppressing actions, flood, flood due to break of dams, landslide, avalanche, wind, excessive rain, hail, and snow storm. The government and SIO are working toward reducing the number of perils covered. The policy does not cover contents.

Size of the insurance payout is determined based on the affected element and its value for the house (set out in the legal frameworks—the example is below) and percentage of total area of this element affected.

Below table is an example of the percentage ratio of the private house elements and their relevant value:

Table 3. Estimating the pay out: the first step

Name of Elements of a House	Percentage Ratio of the Cost of Specific Elements of a House to Total Cost of a House (%)
Foundation	10
Floor	15
Walls (interior finishing)	30
Apertures (windows, doors)	15
Covering	10
Roof	10
Exterior finishing	10
Total	100

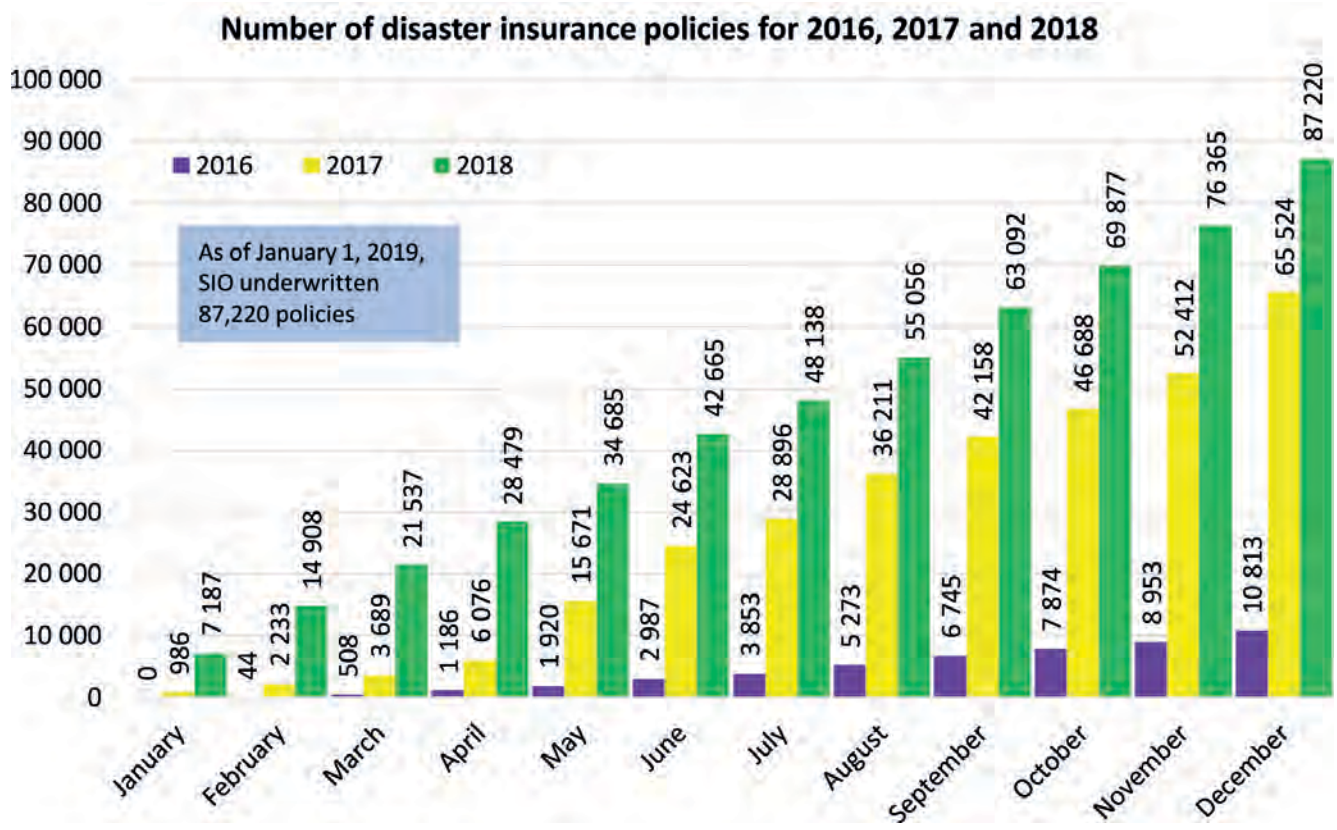
As mentioned, the payout will be further determined based on the percentage of this affected element.

COVERAGE OF DISASTER INSURANCE

Coverage of disaster insurance in Kyrgyz Republic has reached about 7.5 percent of the households (nearly 84,000 policies) as of 2019 with the total liability of around US$740 million.

The graph below provides an overview of policies sold up to January 2019.

Figure 7. Number of insurance policies sold by the SIO, measured by the end of each month (annual policies, cumulative number)



Source: Presentation of the SIO during World Bank Disaster Risk Finance Forum in Almaty, February 2019.

CLAIMS

About US$270,000 was paid out from the beginning of the program in 2015 until the beginning of 2018, with the biggest amount for an earthquake in 2017.

To submit the claim, the insured is required to provide:

- a copy of the Insurance Policy;
- a Summary Claim Report;
- documents issued by the authorized state bodies evidencing occurrence of the insurance event;
- passport copy of the insured (for an individual), articles of association, registration certificate and original Power of Attorney issued to the name of the Representative (for a legal entity).

While there are currently no efficient claims management system in place, the government is working on this area within the ERIK project.

FOCUS ON IMPROVING OPERATIONAL CAPACITY

Within the ERIK project, the focus of the next improvements to the SIO is on:

- Business processes and development of a customize web-based insurance production system.
- Improvement of risk management, including reinsurance function and improvement to claims assessment methodology
- Risk management and regulatory compliance
- Equipment for the local offices.

RISK MANAGEMENT

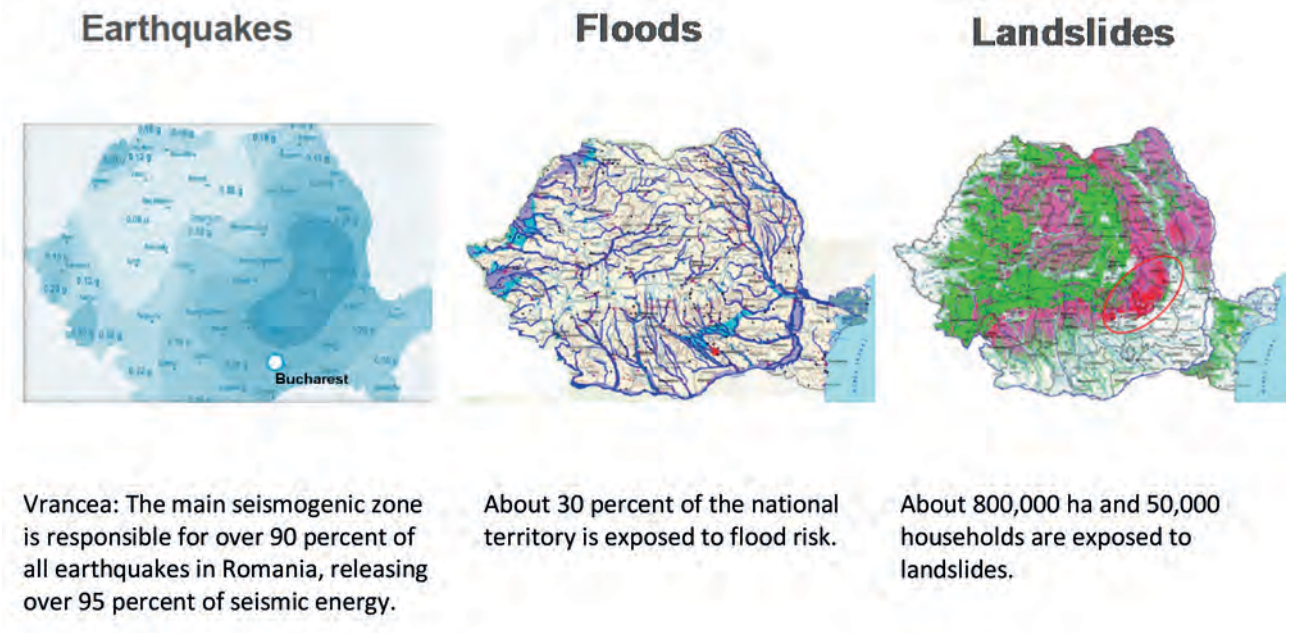
Currently, there is no reinsurance in place.

ROMANIA PAID

ESTABLISHMENT OF PAID

The three most prominent natural hazards in Romania are earthquakes, floods, and landslides. Since 1990, these and other hazards have caused over US$3.5 billion of direct damage; damages from the 1977 earthquake alone exceeded US$2 billion.[46] According to estimates of the National Union of Insurance and Reinsurance Societies in Romania (UNSAR), if the 1977 earthquake occurred today, over 80 percent of affected families would not have the necessary resources to repair or rebuild after its impact (Radu 2016). After the 2005 floods, moreover, Romania had to spend about €70 million for reconstruction of houses; given low insurance penetration, this became a large burden for the public budget and led to a decision to introduce mandatory disaster insurance.

Figure 8. Main hazards in Romania



Source: PAID presentation, World Bank Knowledge Exchange, Bucharest, June 2018.

Disaster insurance in Romania was first created under the World Bank project on Mitigation of Risks caused by Natural Hazards and Preparedness for Emergencies (2004–2012), which supported introduction of property insurance against natural disasters. After the law on mandatory insurance came into force in 2009, PAID was formed by the association of 12 insurance companies; shareholders contributed €4 million to create the pool. The purpose of PAID was to:

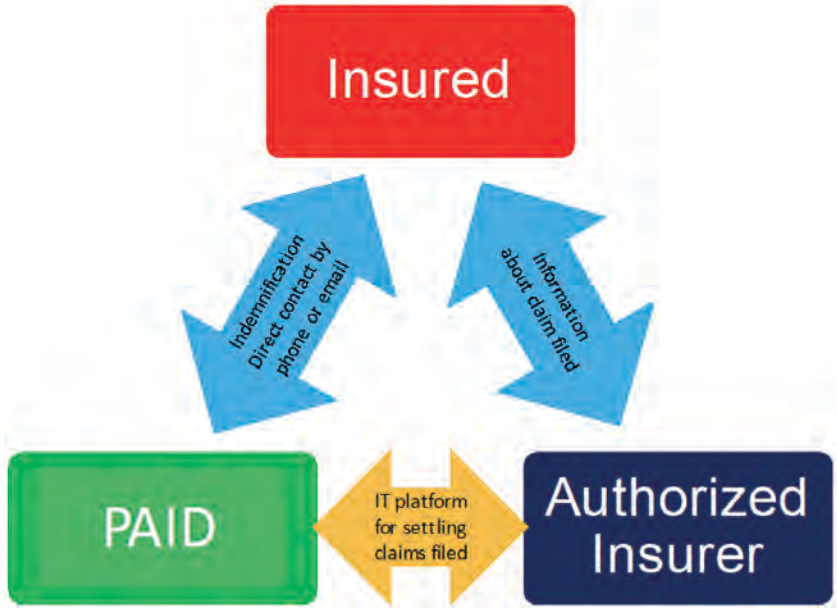
- Provide timely payouts to households affected by flood, earthquake, or landslide
- Provide an accessible product
- Reduce the budgetary impact of natural disasters
- Contribute to the financial education of the public by showing insurance to be an indispensable means of protection

[46] Data for 1990–2017 from EM-DAT: The Emergency Events Database, Université catholique de Louvain (UCL) – CRED, D. Guha-Sapir, Brussels, Belgium, www.emdat.be.

Starting in 2010, when the first disaster insurance policy was finally issued, any insurance company in Romania was able to provide insurance for residential buildings, and voluntary insurance was able to substitute for mandatory insurance. This led to a number of severe problems, including very low penetration for both mandatory and voluntary products. In 2013, PAID became the only company allowed to conclude the mandatory insurance policies (although the private market was able to sell the policies for a fee). In 2015, the law was amended such that insurance companies licensed to write catastrophe risk policies were prohibited from concluding voluntary policies for households that did not have a previously issued mandatory disaster insurance policy.

PAID STRUCTURE

Figure 9. Structure of PAID



Source: PAID presentation, World Bank Knowledge Exchange, Bucharest, June 2018.

PAID is a privately managed pool that consolidates all liabilities from mandatory disaster insurance. While private companies offer this product, all the risks and most of the premium go to PAID, which is responsible for program administration, from risk management to claims handling. All sales of disaster insurance policies go through a centralized information technology (IT) system, managed by PAID.

PAID POLICIES

Two types of policy are offered by PAID:

- Type A: Policy limit of €20,000 per household; premium of €20/year
- Type B: Policy limit of €10,000 per household; premium €10/year

The policy offered depends on the type of the house; more vulnerable houses are covered by the Type B policy with lower premium and coverage. Additional coverage can be purchased on a voluntary basis. The coverage is on first-loss basis, and there is no deductible. Policies cover only loss to buildings and not nonstructural damage (for instance, to contents).

To obtain the policy, households provide no documentation except their personal identification, but they must self-declare their house type. There is no review of the insured property prior to the eligible disaster.

COVERAGE OF DISASTER INSURANCE IN ROMANIA

Coverage of disaster insurance in Romania has reached about 19 percent of the population (or 1.7 million households), while the sum insured has reached €33 billion.

CLAIMS

The loss adjustment process and subsequent payouts to consumers are based on the replacement cost. This means they consider such factors as rising prices or inflation—common after a disaster—that influence the cost of rebuilding or repairing the affected property. Loss adjusters have to visit the property within five days of receiving the claim. Overall, PAID considers the process to be rather slow, in part because some documents have to be presented with the claim (despite the fact that some preliminary modeling of losses is done by the PAID IT system). Payout can be received in a bank account or as cash in every town of the country.

Since its inception, PAID has provided payouts for 6,351 claims. Floods are among the primary claims (49 percent of total claims), with almost €3 million in payouts. Earthquake payouts are about 30 percent of claims (though note that no earthquake of magnitude greater than 5.8 has occurred since 2010). The expense ratio of PAID is 17 percent.[47]

FOCUS ON IMPROVING OPERATIONAL CAPACITY

Preparing contingency plans to handle claims in case of a significant natural disaster is a priority of PAID. Currently, it could take four to eight months just to consider a claim in case of a big disaster. Contingency plans include the following:

- Identification of risks
- Determination of consequences, specifically as they relate to
    - Volume of claims
    - Workload
    - Workforce
    - People in need
    - Reporting and communication deficiencies
    - Exposure of and challenges faced by employees and external professionals (for example, loss adjusters and experts)
    - IT and other technical capabilities
    - Financial burden
- Design of countermeasures

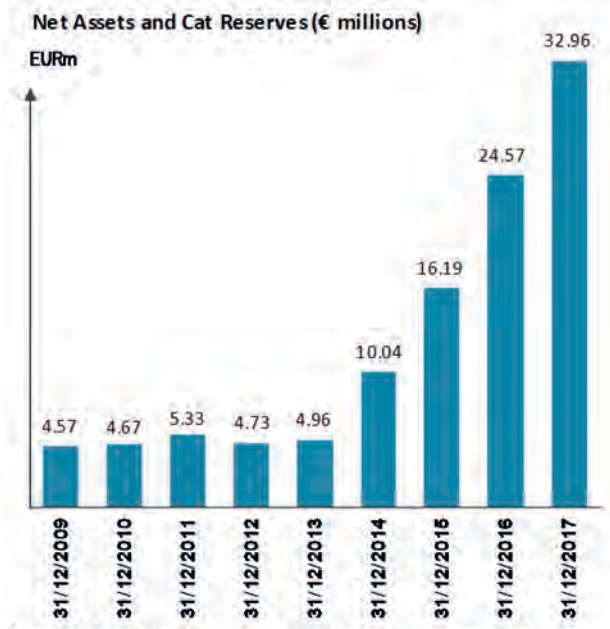
Contingency plans are critical for an insurance company covering disasters that can simultaneously affect a large number of policyholders.

RISK MANAGEMENT IN PAID

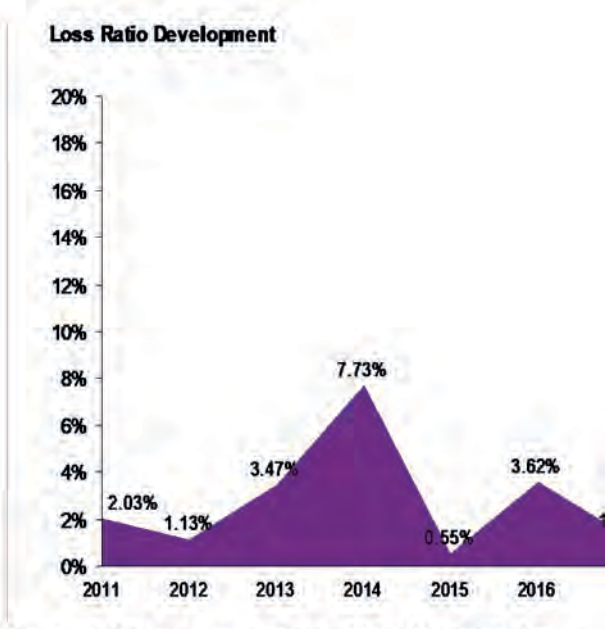
Sound risk management is among PAID's cornerstone principles. As of mid-2018, PAID has accumulated about €33 million in net assets and catastrophe reserves. The accumulated reserves are prudentially invested at low risk (generally as bank deposits or Romanian treasuries).

[47] The expense ratio in the insurance industry is a measure of profitability calculated by dividing the expenses associated with acquiring, underwriting, and servicing premiums by the net premiums earned by the insurance company. An expense ratio under 100 percent signifies the insurance company is either earning or writing more in premiums than it is paying out in expenses to generate and/or support these premiums. See Sebastian (2018).

Figure 10. Left figure: Net assets and catastrophe reserves (€ millions). Right figure: Loss ratio in PAID.

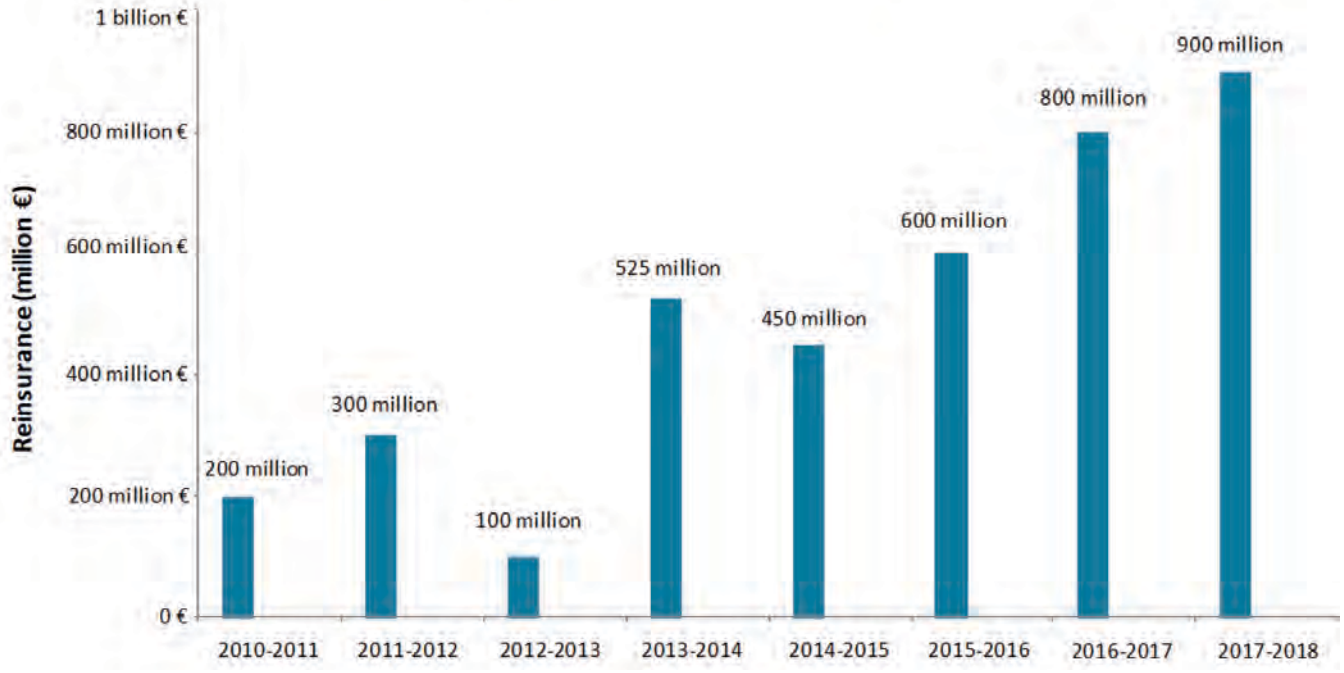


Source: PAID presentation, World Bank Knowledge Exchange, Bucharest, June 2018.



Source: PAID presentation, World Bank Knowledge Exchange, Bucharest, June 2018.

Figure 11. Reinsurance purchased by PAID.



Note: In 2017–2018, PAID bought reinsurance from 68 reinsurance companies from around the world for €900 million; all companies were rated A– or higher by Standard & Poor's.

Since its establishment, PAID has also prudently built an efficient reinsurance portfolio (with about 50 percent of its profits spent annually on reinsurance premiums). For 2017–2018, about €900 million in reinsurance was purchased from 68 international reinsurance companies rated at least A– by Standard & Poor's.[48] Due to these efforts, PAID had achieved a Solvency II ratio of 206 percent at the end of 2017.[49]

PAID works constantly to improve the quality of its risk data, because high-quality and granular data allow it to develop detailed risk assessments. These in turn lead to better internal risk management and more reliable catastrophe modeling for reinsurance-capacity decision making. (In other words, better data improve reinsurance conditions and risk management). Currently, over 98 percent of the portfolio uses the highest-quality modeling data, and geocoding information at address/street level is almost 72 percent.

[48] Standard & Poor's ratings aim to provide independent evaluation of the financial soundness of companies, including insurance companies. The rating looks at the ability to repay creditors and any claims, company performance in comparison to other insurance companies, management style, capital and earnings, and other factors. An "A" rating shows a strong capacity to meet financial commitments. See Hunt (2018).

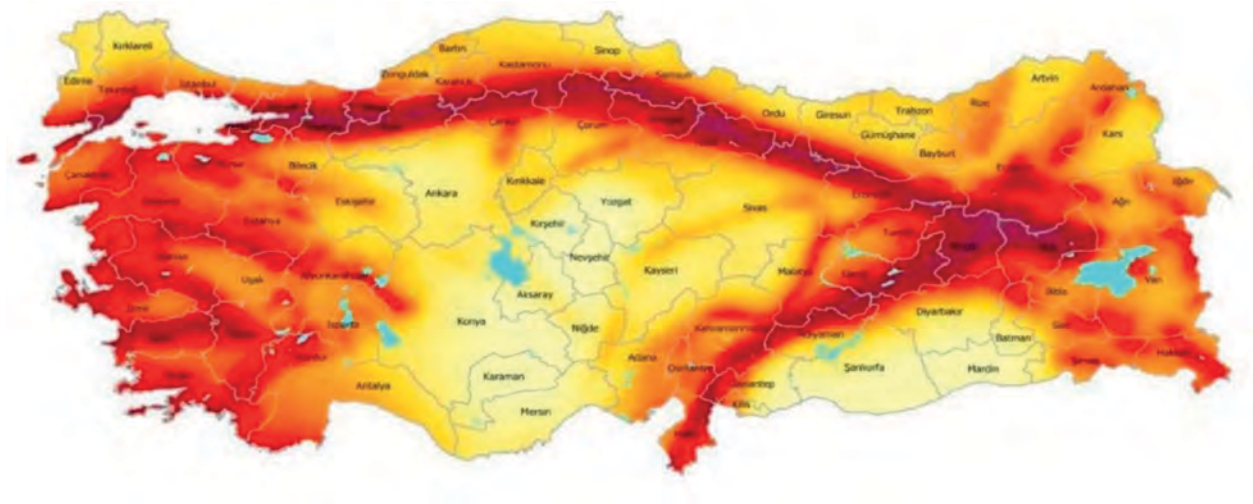
[49] A Solvency II ratio of 100 percent means that an insurer's capital is such that it will be able to meet its obligations even in the event of a severe shock (one expected to occur once every 200 years). DNB, "Solvency II: A New Framework for Prudential Supervision of Insurance Companies," https://www.dnb.nl/en/binaries/Factsheet%20Solvency%20II%20-%20final%20-%20English_tcm47-335167.pdf.

TURKEY DASK

ESTABLISHMENT OF DASK

Devastating earthquakes in the Marmara region of Turkey in 1999 caused an economic loss of about US$10 billion, of which only US$800 million was insured (reflecting low insurance penetration, especially for private property). The result was a significant burden on the public budget; the government faced a shortage of immediate funds and had difficulty in compensating affected households because of other competing priorities, such as restoring access to clean water, public services, and public assets and infrastructure as well as providing security.

Figure 12. Map of seismic hazard in Turkey



Source: Presentation by DASK during World Bank knowledge exchange in 2017.
Note: The darker red color represents higher seismic risk.

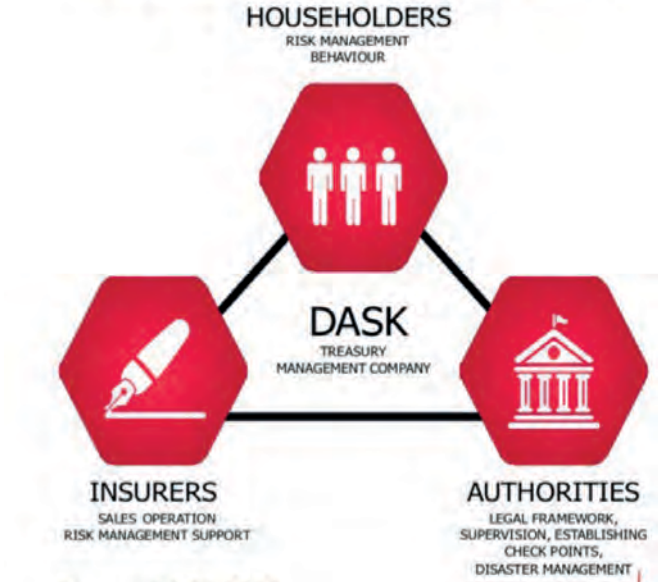
This funding gap led the Government of Turkey to introduce a mandatory earthquake insurance program; a 2000 decree establishing the program was followed by a law adopted in 2012. The law had the following aims:

- Provide affordable earthquake insurance for every homeowner
- Allow for a true risk transfer mechanism
- Introduce claims-paying capacity to limit government's exposure
- Build national catastrophes reserves over time
- Improve the risk culture and the insurance consciousness of the public
- Rely on the distribution channels of the Turkish insurance industry

This program was established with the support of World Bank technical assistance and the World Bank Marmara Earthquake Emergency Reconstruction investment project (Gurenko et al. 2006).

STRUCTURE OF DASK

Figure 13. Legal and financial basis of DASK



Source: DASK 2017.

Launch of this program has led to the establishment of the Turkish Catastrophe Insurance Pool (DASK), a governmental special-purpose organization under the Treasury of Turkey. Despite being a government organization, DASK operates on private market principles, including prudent risk management and efficient operations. The initial capitalization for creating DASK was provided as a loan to the government, which DASK has repaid in full. To ensure the pool's efficiency, a decision was made to seek private management, and following a competitive tender the Dutch company Eureko Sigorta was selected to manage the pool until 2020. This arrangement has decreased DASK's operating costs to 2 percent of annual written premium (the usual operational cost for such a business is 15 percent).

The DASK policies sell through private companies and organizations (including banks and intermediaries), which retain a 12.5–17.5 percent commission;[50] consumers can also buy the policies online. The sales are made through a centralized IT system.

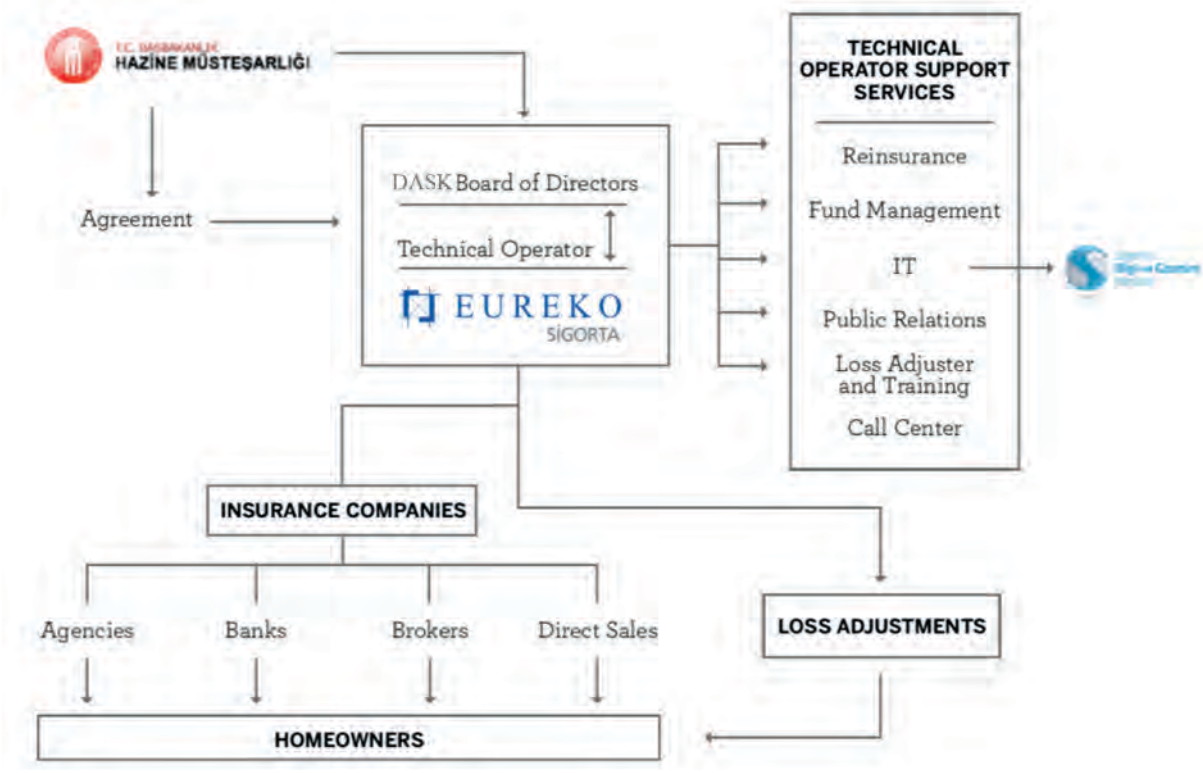
The government supports DASK in a number of ways. It has introduced relevant legal frameworks, including checkpoints for verifying consumers' purchase of the insurance policy (for example, when consumers apply for a mortgage, connect to utility services, or use land registry services). It has also promoted public awareness of disaster insurance and has taken risk reduction measures (for example, by improving the seismic safety of buildings). Finally, the government is a part of the DASK Board of Directors and involves DASK in post-disaster processes.

DASK POLICIES

The mandatory earthquake insurance offered in Turkey covers only residential buildings and excludes their contents. There are three pricing factors that determine the premium: property location, type, and size. A 2 percent deductible is included in all coverage.

[50] See DASK's website at http://www.tcip.gov.tr/mevzuat-tarife.html.

Figure 14. Organizational chart of disaster insurance in Turkey



Source: DASK 2015.

To purchase the policy, consumers need to supply only a little information. The policy is issued based on the self-declaration of the insured regarding the property. The policy can also be purchased online (a process facilitated by the fact that every house in Turkey has an identification number).

Table 4. Pricing of earthquake insurance: Premium and coverage

Rates based on zones as per the building type (per mille)	1st Zone	2nd Zone	3rd Zone	4th Zone	5th Zone
A-Steel, concrete	2.20	1.55	0.83	0.55	0.44
B-Masonry buildings	3.85	2.75	1.43	0.60	0.50
C-Other buildings	5.50	3.53	1.76	0.78	0.58

Source: DASK 2015.

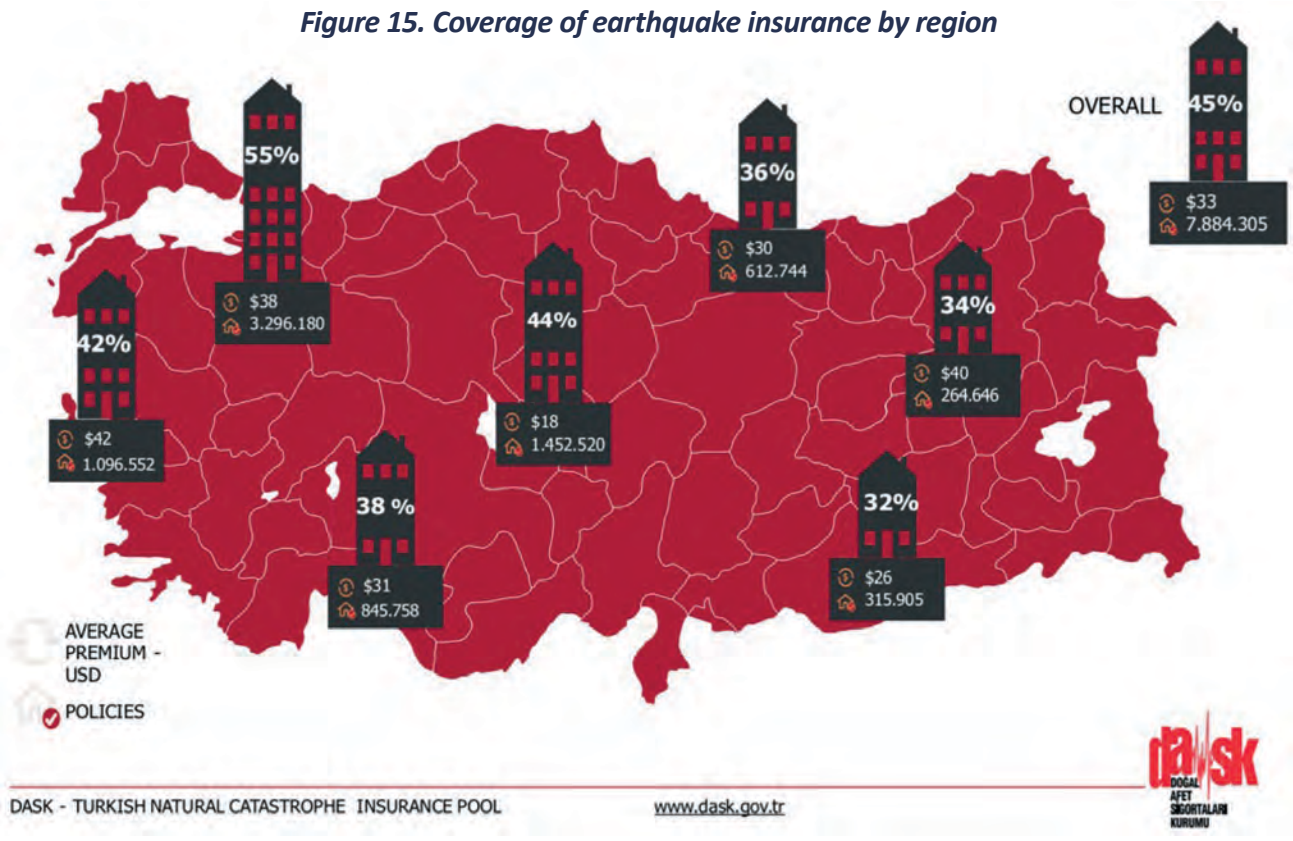
Among the difficulties that DASK has faced is how to promote continuous sales and renewals of its policy. While the checkpoints ensure the one-time purchase of a policy, it is difficult to enforce the purchase of the policy the next year after the checkpoint has been passed. To increase sales, DASK offers some benefits for renewals, such as discounts for purchasing the policy several years in a row, or a discount when a whole condominium is insured – for example, a 10 percent discount is applied for renewing a policy, a 20 percent discount is applied after four renewals, and a 20 percent discount is applied if all units in the condominium are insured.[51] DASK also seeks to promote sales through public awareness campaigns carried out by the government, schools, other institutions, opinion leaders, and so on.

[51] See DASK, "Tariff and Instruction of Compulsory Earthquake Insurance," http://www.tcip.gov.tr/mevzuat-tarife.html.

COVERAGE OF DISASTER INSURANCE IN TURKEY

Coverage of disaster insurance countrywide has reached 45 percent.

Figure 15. Coverage of earthquake insurance by region



Source: DASK 2017.

CLAIMS

DASK's loss adjustment process and the subsequent payouts to Turkish consumers are based on the replacement cost. DASK has paid out a total of US$49 million in claims (altogether, about 22,000 claims have been received after 539 damaging earthquakes). According to DASK, the most recent major earthquake – in Van on October 23, 2011 – caused losses estimated at about US$40 million.

FOCUS ON IMPROVING OPERATIONAL CAPACITY

Among the lessons DASK has learned is that operational capacity is as important as financial capacity. While DASK has been successful in growing reserves and purchasing reinsurance, it has also faced difficulties when many claims arrive at the same time, such as occurred during the Van earthquake in 2011.

DASK's current operational capacity for claims handling includes access to about 280 loss adjusters with earthquake experience (DASK 2015). However, DASK has estimated that more persons would be needed for this task if a large earthquake occurred. Similarly, more capacity would be needed to receive and process these claims. To build needed capacity, several initiatives have been undertaken:

- *A mobile application for loss categorization has been developed* to streamline and facilitate the loss adjustment process. The application allows a non-engineer to make an initial estimation of the loss following a simple training, and it also indicates whether an expert loss adjuster is needed in a specific situation. It includes estimation of both structural and nonstructural damage. Filling in the mobile application form takes a short time, and the

results of the initial assessment (accompanied by photos of the damage) are processed in the central DASK office.

- *Ongoing improvements to risk modeling and to risk and loss assessment have been made through the IT system.* Among other functions, the IT system now provides data on policy exposure (including specifically the number of insured apartments in condominiums), financial loss modeling, operational capacity (down to the local settlement level), claims adjustment capacity modeling, and change detection (via satellite photos of houses). The system can also be used to issue policies.
- *The capacity of the call center ("Hello DASK") has been increased.* The call center became operational in 2012; the center's goal is to accommodate enough operators for the most intense (seventh) week after a disaster, when in DASK's estimation calls are likely to peak.
- *Loss adjustment operational capacity has been increased* through strategic partnerships, for instance, with the Ministry of Environment and Urbanization (which can now provide additional engineers for claims adjustment when needed).
- *Disaster risk management in Turkey has been improved* in coordination with other line ministries and agencies, including the Disaster and Emergency Management Presidency (Afet ve Acil Durum Yönetimi Başkanlığı, AFAD). The greatest priorities are coordinated postdisaster response and recovery along with risk reduction measures. For example, DASK is currently negotiating with AFAD and the Ministry of Environment and Urbanization to create a database on Turkey's building stock.

RISK MANAGEMENT IN DASK

DASK has accumulated significant reserves—amounting to US$1.4 billion—since its inception. Investment of the accumulated reserve funds is guided by the national law and follows a safe investment strategy, with the funds mostly invested in government securities.

In 2017, about US$3.25 billion of reinsurance protection was purchased. The Government of Turkey also provides reinsurance support to DASK.

DASK also uses other mechanisms for guaranteeing availability of financing, such as catastrophe bonds (CAT bonds). The second CAT bond, called Bosphorus Ltd., was issued in 2015 in the amount of US$100 million for a three-year period.

As of 2017, DASK's total claims payment capacity is US$4.2 billion (DASK 2017).

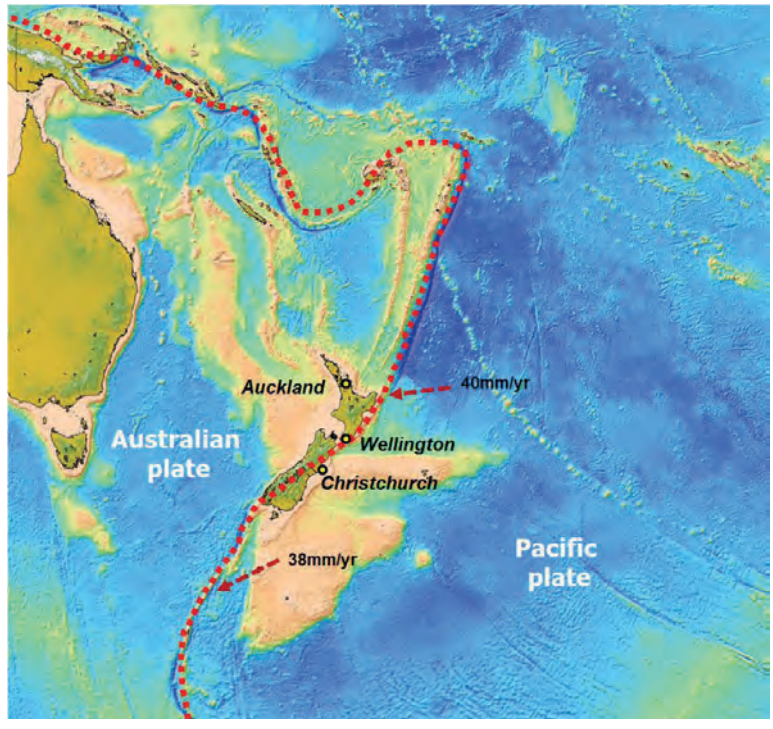
NEW ZEALAND EQC

ESTABLISHMENT OF EARTHQUAKE COMMISSION

New Zealand is located on the Ring of Fire and is therefore extremely prone to earthquakes and volcanic eruptions and tsunami, in addition to a range of meteorological/weather related events. The Earthquake and War Damages Commission was established in 1945 following the 1942 Wairarapa Earthquake with objective to reduce the impact on people and property when natural disasters occur. The decision to establish it was also when the government realized that homeowners do not have enough resources to finance the reconstruction. The Commission supported population following large disasters, such as an earthquake off Poverty Bay (that produced a large tsunami) in 1947, and an earthquake that hit Inangahua in 1968. In 1993, it was reformed as EQC to focus only on residential property.

The 2010–11 Canterbury earthquake sequence resulted in over 469,000 claims to EQC (with private insurers receiving additional 137,000 residential claims). This was followed by another damaging earthquake in Kaikoura in 2016. These events highlighted many challenges and resulted in a few changes to the insurance program, including to the premiums and insurance cover, as well as rethinking the role of the private sector and reinsurance.

Figure 16. New Zealand's location on the Ring of Fire



EQC STRUCTURE

EQC is a Crown entity, it is owned by the government.

EQC POLICIES

EQC provides a first-loss cover per event for residential property (EQcover) with the rest of the risk covered by the private sector. EQcover is offered for five perils, including earthquake, natural landslip, volcanic eruption, hydrothermal activity and tsunami.

EQcover is voluntary, but it is offered as a compulsory extension to a fire policy. In July 2019, cover has been increased to $NZ 150,000, while the coverage of home contents was removed due to difficulties in adjusting the losses to the contents in view of the required speed of the payouts.

EQcover has a flat rate premium of 20 cents per $NZ 100 of cover (with a maximum of $NZ 345 per annum), which was increased from 15 cents following the Canterbury and Kaikoura earthquakes. Uninsured do not receive support neither from the government or the EQC.

COVERAGE OF DISASTER INSURANCE

Coverage of disaster insurance in New Zealand is 95 percent of all households.

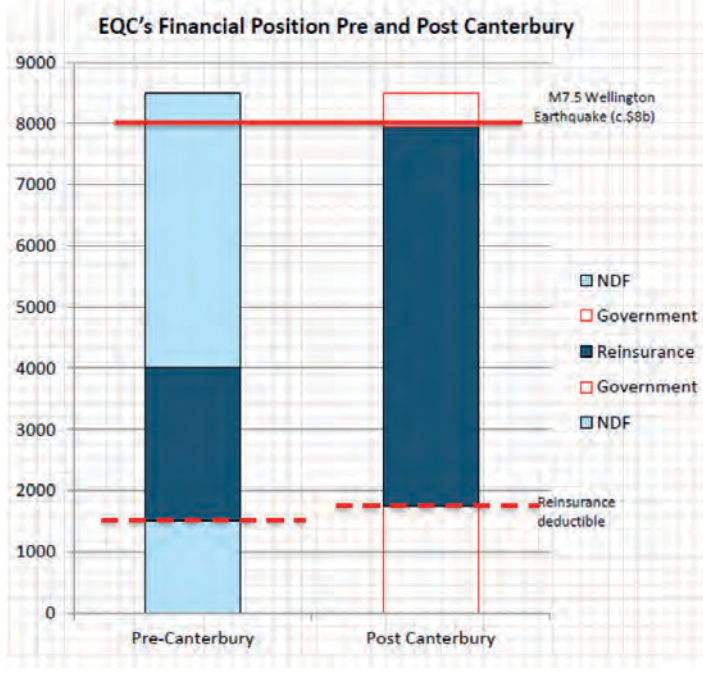
CLAIMS

Payouts are based on a replacement cost up to the insured limit. After Carterbury earthquakes, EQC paid out over $NZ 10 billion. One of the issues highlighted by this event was the double handling and inefficiencies between private insurers and EQC in loss adjustment—with EQC agents coming as the first-loss adjusters and private insurers coming the second time both to determine the extent of their cover. Kaikoura was the first event where a new response model was piloted, with eight private insurers acting as agents of EQC to manage settlement of the claims.

FOCUSING ON IMPROVING OPERATIONAL CAPACITY

During the Canterbury earthquakes, EQC faced complexity of multiple large events in the same location and time, which stress tested its capacities, uncovering lack of staff, high expectations and lack of understanding of how insurance cover works or how to submit the claim from the population. Since then EQC is investing in growing its capacity for claims management and on improving customer relations and communication with the clients.

Figure 17. EQC financial position and focus on increasing reinsurance after the Canterbury earthquake



RISK MANAGEMENT

EQC relies on risk retention through the Natural Disaster Fund, reinsurance protection and an unlimited excess of loss Crown guarantee (for the latter it pays about $NZ 10 million per year). Over its existence, EQC had built up a significant pool of financial assets including in the Natural Disaster Fund (of over $NZ 4 billion) and a significant reinsurance program (of several billion). However, the Canterbury and Kaikoura earthquakes exhausted the Natural Disaster Fund and called on practically the entire reinsurance coverage. In November 2018 EQC called on the Crown's guarantee for the first time.

After the Canterbury earthquakes, EQC is working toward strengthening reinsurance protection (increasing the reinsurance cover gradually, such as from $NZ 4.83 in 2017-2018 to $NZ 5.5 in 2018-2019) and building back the Natural Disaster Fund (currently this layer of risk is also covered by the Crown) (see figure 7). It also increasingly invests resources in loss modelling through the local research institutes to ensure a sound pricing and a good position with the international reinsurance markets.

SUMMARY TABLE OF THE INTERNATIONAL DISASTER INSURANCE PROGRAMS

The table below provides a summary of the aforementioned disaster insurance programs.

Table 5. Summary of the international disaster insurance programs

	New Zealand	Romania	Turkey	Kyrgyz Republic
Program name	EQC	PAID	DASK (TCIP)	Mandatory Insurance of Houses against Fire and Natural Disasters
Program type	Public	Private	Public-private	Public
Number/type of disasters included	5: Earthquake, natural landslip, volcanic eruption, hydrothermal activity, tsunami	3: Earthquake, flood, landslide	1: Earthquake	18: Earthquake, flood, strong wind, avalanche, hail, and so on
Coverage for households	Voluntary	Mandatory	Mandatory	Mandatory
Premium: Flat or risk-based	Flat	Flat; 2 policy types (depending on type of property)	Ranges by 3 pricing factors (location and type/size of property)	Flat; different by rural/urban
Premium size	20 cent per 100 of fire insurance cover; capped at $NZ 345	1 per 1000	0.44–5.50 per 1000	1.2 per 1000
Coverage size	Maximum $NZ 150,000	€10,000 or €20,000	Average coverage of about US$60,000	US$7,200–14,300
Assets covered	Buildings, land	Buildings	Buildings	Buildings
Deductible	Yes	No	Yes, 2%	No
Reinsurance	Private and government	Private	Private and government	No access to reinsurance
Claims assessment	Damage assessment that considers replacement cost	Damage assessment that considers replacement cost	Damage assessment that considers replacement cost	Damage assessment estimating % of affected area
Government role	Guarantor for when funds are exhausted	Supports with legal frameworks	Provides excess of loss reinsurance; supports with favorable legal frameworks	Supports with legal frameworks

ANNEX 1. OVERVIEW OF THE DATA PROVIDED

With support from the MoF, the data on disaster insurance was obtained from 24 insurers in Uzbekistan, excluding one company that provided data not in accordance with the requested template. The table below summarizes the provided data.

Table 6. Overview of the data provided

##	Company	No of reinsurance policies	GWPs, the insured sum under FLEXA insurance for private, commercial, and industrial property	No of properties insured against disasters (apart from FLEXA)	Reinsurance for the property insured against disasters	Average premium	Franchise	Risk data collection	Comments
1	ALFA INVEST	Data provided. The data on insurance coverage under reinsurance policies (obligatory) partially includes catastrophe reinsurance (the proportions are specified). Most reinsurance policies are in Tashkent, but there are also reinsurance policies in oblasts. All reinsurance policies are signed with an Azerbaijan reinsurer, that is, AZ Re Reinsurance OJSC	Data provided	Data provided	Data provided: no reinsurance	Data not provided	Data provided: franchise is foreseen	Data not provided	
2	ALSKOM	Data provided: 99 reinsurance policies for various types of property across the country (facultative). No data provided for disaster risk reinsurance. Weird franchises (seem to be 60 to 70%)	Data provided	Data provided: none	Data not provided	Data not provided	Data not provided	Data not provided	Major risks are shared based on the company's decision
3	APEX INSURANCE	Data provided: 4 reinsurance policies (facultative)	Data provided	Data provided	Data provided: reinsurance is available for all types of property	Data provided	None	Data provided, no details	Control over risk accumulation by territory, type of risks, and type of property

##	Company	No of reinsurance policies	GWPs, the insured sum under FLEXA insurance for private, commercial, and industrial property	No of properties insured against disasters (apart from FLEXA)	Reinsurance for the property insured against disasters	Average premium	Franchise	Risk data collection	Comments
4	ASIA INSURANCE	Data provided in Uzbek in the company's own format; not readable	-	-	-	-	-	-	-
5	ASKO	Data provided: 42 reinsurance policies (facultative)	Data provided	Data provided	Data provided: non-proportional reinsurance is available for commercial and industrial property	Data provided	None	Data provided, no details	
6	DD GENERAL INSURANCE	Data provided: 36 reinsurance policies (facultative)	Data provided	Data not provided	Data not provided	Data not provided	Data not provided	Data not provided	Data provided: not in thousands of US$
7	EUROASIA INSURANCE	Data provided: 320 reinsurance policies (facultative)	Data provided	Data not provided	Data not provided	Data not provided	Data not provided	Data not provided	
8	GARANT INSURANCE GROUP	Data provided: 14 reinsurance policies (facultative)	Data provided	Data provided: only FLEXA + remaining disasters	Data not provided	Data not provided	Data provided: franchise is foreseen	Data provided, no details	
9	GLOBAL INSURANCE GROUP	Data provided: 28 reinsurance policies (facultative)	Data provided	Data provided	Data provided: proportional reinsurance is available for commercial and industrial property	Data provided: data quality is questionable	None	Data provided: none	

##	Company	No of reinsurance policies	GWPs, the insured sum under FLEXA insurance for private, commercial, and industrial property	No of properties insured against disasters (apart from FLEXA)	Reinsurance for the property insured against disasters	Average premium	Franchise	Risk data collection	Comments
10	GROSS INSURANCE	Data provided: 53 reinsurance policies (facultative) and one obligatory reinsurance policy; the latter was signed with Hannover Re.	Data provided	Data provided	Data provided: none	Data provided: data quality is questionable	None	Data provided, no details	Franchise option is not available; however, it is said that a franchise as % of the insured amount is common
11	HAMKOR SUG`URTA	Data provided: 69 reinsurance policies (facultative)	Data provided	Data provided: only FLEXA + remaining disasters	Data provided: overall, reinsurance is purchased, but there is no information on disasters	Data provided: in %	Data provided: franchise is foreseen as % of the insured amount	Data not provided	
12	INGO-UZBEKISTAN	Data provided: 106 reinsurance policies (facultative)	Data provided	Data provided	Data provided: none	Data provided	None	Data provided, no details	
13	IShONCh	Data provided: 27 reinsurance policies (facultative)	Data provided	Data provided: only FLEXA	Data provided: proportional reinsurance is available for commercial and industrial property	Data not provided	None	Data not provided	Average rates were not provided

##	Company	No of reinsurance policies	GWPs, the insured sum under FLEXA insurance for private, commercial, and industrial property	No of properties insured against disasters (apart from FLEXA)	Reinsurance for the property insured against disasters	Average premium	Franchise	Risk data collection	Comments
14	KAFIL-SUG'URTA	Data provided: 47 reinsurance policies (facultative)	Data provided	Data provided + some disaster insurance policies for commercial property	Data not provided	Data provided: in %	Data not provided	Data not provided	
15	KAFOLAT	Data provided: 6,261 reinsurance policies, of which a few thousand policies are for property, residential dwellings (quota share reinsurance and excess of loss reinsurance); lots of reinsurance policies for collaterals	Data provided	Data provided: only FLEXA	Data not provided	Data provided: in %	None	Data provided: data is not collected	
16	KAPITAL SUG'URTA	Data provided: 13 reinsurance policies (facultative)	Data provided	Data provided: only FLEXA	Data not provided	Data provided	None	Data provided, no details	Site monitoring before insurance and during the insurance period
17	MEGA INVEST INSURANCE	Data provided: 117 reinsurance policies (facultative)	Data provided	Data not provided	Data not provided	Data not provided	Data not provided	Data not provided	
18	TASHKENT INSURANCE GROUP	Data provided: 130 reinsurance policies (facultative)	Data provided: only in Tashkent	Data provided: only FLEXA	Data provided: proportional reinsurance is available for commercial and industrial property	Data provided: in %	None	Data provided, no details	

##	Company	No of reinsurance policies	GWPs, the insured sum under FLEXA insurance for private, commercial, and industrial property	No of properties insured against disasters (apart from FLEXA)	Reinsurance for the property insured against disasters	Average premium	Franchise	Risk data collection	Comments
19	TEMIRYO'L -SUG'URTA	Data provided: 41 reinsurance policies (facultative)	Data provided	Data provided	Data provided: non-proportional and proportional reinsurance is available (no details)	Data provided: in %	Data provided: franchise is foreseen as % of the insured amount	Data provided, no details	
20	UNIPOLIS	Data provided: 17 reinsurance policies (facultative)	Data provided	Data provided: only FLEXA	Data provided: proportional reinsurance is available for commercial and industrial property (amount by type of property is not specified)	Data provided	Data provided: franchise is foreseen as % of the insured amount	Data provided, no details	
21	UNIVERSAL SUG'URTA	Data provided: 72 reinsurance policies (facultative)	Data provided: only total amount	Data provided: only FLEXA	Data provided: reinsurance is available for all types of property (amount by type of property is not specified)	Data not provided	Data provided: franchise is foreseen	Data provided, no details	

##	Company	No of reinsurance policies	GWPs, the insured sum under FLEXA insurance for private, commercial, and industrial property	No of properties insured against disasters (apart from FLEXA)	Reinsurance for the property insured against disasters	Average premium	Franchise	Risk data collection	Comments
22	UZAGRO-SUGHUR-TA	Data provided: 111 reinsurance policies (facultative)	Data provided	Data provided: only FLEXA	Data provided: none	Data provided	None	Data provided, no details	Property insurance includes only FLEXA; fire insurance is available for commercial property. Major risks are transferred to reinsurers
23	UZBEK-INVEST	Data provided: 6 reinsurance policies (facultative)	Data provided	Data provided	Data provided: reinsurance is available for industrial property	Data provided: in %	Data provided: franchise is foreseen as % of the insured amount (% of loss is also specified for private property)	Data provided, no details	Data provided not in thousands of US$ A data base is used to track risk accumulation. Risks that exceed the risk retention threshold are transferred to reinsurers (UZS 170 billion)
24	XALQ SUG'URTA	Data provided: 120 reinsurance policies (facultative)	Data provided	Data provided: only FLEXA	Data provided: amounts are available for commercial and industrial property; no amount is specified for private property	Data provided: in %	None	Data provided, no details	