Infrastructure stimulus packages: their impact on the Engineering Treaty Re/Insurance market

The global economic and financial crisis has led many countries to announce major fiscal stimulus packages designed to support their economies and to ensure sustainable and balanced economic recovery. All of the fiscal stimulus programs adopted in both developed and developing countries were reaffirmed during the G20 Summit in Pittsburgh on September 25, 2009.

Regional differences in stimulus spending on infrastructure projects

Fiscal stimulus packages represent one of the means available to governments to lead the economy out of recession or economic slowdown; they entail tax cuts and/or government spending increases. The plans announced over the past months vary in size, composition and timing, depending on the countries involved.

On a global basis, government contributions are expected to add 7% to the world’s annual construction output in 2009 and 2010, which should lead to the stabilization of the industry in 2010 and a return to growth of approximately 5% per year in 2011 and 2012.

One aspect that cannot be neglected in this analysis is the wide range of implementation practices to be found among the international community. The approaches used affect both the timing and the focus of stimulus spending.

In Asia, governments tend to implement their plans quickly with a strong emphasis on infrastructure projects. The example of China, where GDP grew approximately 7% in the first half of 2009, shows how governments can respond rapidly and channel resources where needed. At the other end of the spectrum is the USA, where funds are distributed by state and projects must go through an application process. The largest portion of stimulus spending in the construction industry is therefore not anticipated in the USA before 2010.

In the European Union, a combination of these two approaches can be observed. As each country manages its own stimulus package, the EU has also allocated some resources to EU-wide initiatives. There are an equally wide variety of practices in terms of the portion of stimulus money allocated to construction projects.

Clearly, those countries that had planned to focus on improving their infrastructure before the global economic crisis are now the same countries allotting the biggest shares to infrastructure construction, with notable discrepancies as shown in the graph hereafter.

In the Middle East, probably one of the regions worst hit by the withdrawal of private investment, governments make up for lost business through stimulus packages thereby shifting private construction activity towards public projects. In Egypt for example, the government has announced infrastructure spending of US$ 3 billion. In Saudi Arabia, the Ministry of Education announced 3,500 projects at a total cost of US$ 5 billion. A similar amount has been announced for infrastructure spending in Israel, mainly dedicated to roads, railways and water projects.
In Latin America, while no infrastructure spending has been announced under fiscal stimulus packages, the governments of the region have committed themselves to significant infrastructure spending:

- In Brazil, the “Program of growth acceleration” has been confirmed. It includes BRL 504 billion (US$ 212.6 billion) for projects focused on three areas:
  - logistics (railways, roads, ports, airports and seaways);
  - energy (electricity generation and grids, oil and gas, renewable energy);
  - social infrastructure (sanitation, housing, urban transportation, access to electricity and potable water).
- In Argentina, the government announced an infrastructure development program worth ARS 110 billion (US$ 31 billion) at the end of 2008, due to be implemented over 2 years.
- In Mexico, planned spending on the National Infrastructure Development program will total MXN 2.5 trillion (US$ 200 billion) over the next five years and includes spending on a wide range of business sectors (roads, railroads, airports, hydroagriculture, refining, telecommunications, etc.).

Fiscal stimulus packages & infrastructure investments
(as per governmental announcements in the late 2008 and 2009)

(1) Europe, Middle East & Africa
(2) Plans regarding infrastructure investment only
(3) Half of the green measures include budget for green jobs

Source: SCOR Research
Some countries have seized on the opportunity presented by the crisis to introduce or strengthen environmentally friendly schemes, such as renewable energy projects, low energy-consuming rail projects, low carbon programs, etc. It is worth noting the example of the European Union, which places particular importance on “green” building, in order to increase the efficiency of the resources used and to reduce the impact of construction on the environment. China is another noteworthy example, with a plan amounting to some US$ 218 billion allocated to green projects. Nevertheless, just like the case for the composition or the timing of infrastructure investments, the proportion of “green” items in the stimulus plans varies significantly between countries.

Considering the short-term objectives of stimulus packages to boost the domestic economy, it is not surprising that the impact on the infrastructure construction industry is immediate but transitory. In order to be awarded stimulus money, construction projects have to fulfil certain timing conditions. Most have to be initiated as soon as possible and should not last more than three years.

From a (re)insurance perspective this shorter-term activity has a positive effect, as the average construction period will decrease to between a few months and two years as opposed to a normal treaty with a tail of three to four years. In terms of nature of activity, stimulus-funded projects typically focus on infrastructure improvements, such as highway paving and road extensions. For insurers, this translates into an increase in CAT exposure, especially for horizontal construction which tends to be more exposed to localized heavy rainfall and flooding and to have a higher loss frequency.

In the medium run, mid to large-scale projects, which in many countries were previously put on hold due to lack of financing, are now being accelerated to create jobs. More complex projects that require a longer planning period, such as bridge and tunnel improvement and construction, fall in this category. The underlying risk created by these construction activities resembles a typical engineering treaty with a construction period of 2-4 years.

The projects normally found in an Engineering portfolio tend to be large and long-term in nature. They include complex transportation infrastructure projects, such as high-speed rail systems and highways through mountainous areas, as well as harbours and airports. However, as these projects cannot be developed overnight, real spending growth in transportation construction is not expected before 2010. Yet, going forward, this sector will see strong and stable growth, leading to the normalization of the underlying risks in terms of tail, value and exposure.

The differing pace of implementation in terms of stimulus-funded projects creates a smoothing effect for the Engineering reinsurance market. Starting with Asia, which is already partially in expansion mode, region after region will recover from the economic crisis, restoring the demand for insurance to normalized levels.

Expected impact on underlying Engineering portfolio risks

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<th>Capital intensity by Engineering segment</th>
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<th>Expected underwriting ratio(^\text{(1)}) by Engineering segment</th>
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\(^\text{(1)}\) Underwriting ratio = the addition of the expected loss ratio and acquisition cost ratio

Expected return on allocated capital by Engineering segment

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\[ \text{Stimulus packages} \]
\[ \text{Traditional Engineering business} \]
Project safety management

Major projects usually involve modern, sophisticated Risk Management processes designed to control all vulnerabilities. Smaller projects should include at least the minimum requirements in term of Risk Control, based on recognized best practices and international standards. In terms of prevention this includes the control of ignition sources on the construction site, the control of hazardous operations exposing existing installations, the proper separation of material and equipment to be installed and adequate storage conditions for such material and equipment. In terms of protection, automatic fire detection and fire fighting equipment must be fully tested prior to the installation of expensive equipment inside buildings. Ground conditions must also undergo expert assessment through geo-technical investigations, both at the planning stage and later on during construction, in order to adapt construction methods to the actual conditions encountered. This is particularly pertinent to complex civil engineering projects.

A global insurer’s testimony: Zurich Global Corporate

1. What kind of impact can we expect from the governmental stimulus packages?
   Overall they give a positive slant to worldwide market sentiment and to the regional/local recession environment. Foreign direct investments have decreased significantly in Europe and North America, whereas in other parts of the world, i.e. the CIS and Asia, foreign direct investments are still common. Governmental stimulus packages are viewed as providing vital support to local infrastructure improvements of all sizes and degrees of complexity. These range from road/pavement/traffic optimization projects to major energy and civil construction works (e.g. dams, tunnels, underground rail networks, nuclear power stations, etc.).

2. Is our industry ready to cope with the new demand?
   This new demand needs to be reflected internally by the appropriate skills in underwriting, risk engineering and claims. At Zurich, we manage a wide-ranging and diversified Engineering Lines portfolio, with a dynamic allocation strategy through the various sub lines (such as CAR, EAR, MB, EEI, CECR, etc).

   Our teams have the right skill sets to make the most of the opportunities created by such demand. Our critical mass ensures that we have enough experts around the globe to support our customers’ regional and local needs.

3. What positive and negative effects can be expected?
   With these stimulus packages we expect smoothed CAR and EAR production figures, which would compensate for private investments having dropped significantly due to the worldwide credit crunch. In some countries/regions, we see that the project approval process has been shortened, and projects that had been under review for years have materialized within a very short period of time. With the investment shift from housing construction to heavy civil construction, however, our clients need to adapt their workforce skill sets accordingly if they are to survive in an extremely competitive environment. Zurich has an open and transparent dialogue with its customers, identifying new risks in order to properly evaluate exposures and provide risk management advice to stakeholders throughout the construction process. Standardized credit risk/cash flow pattern checks on construction companies and the thorough valuation/certification of construction goods and project costs, etc., could become standard due diligence elements in the risk assessment process to identify target customers. As stimulus packages are supposed to focus on local projects and improvements, there is a potential risk of local protectionism which could prevent a free market for the best labour and materials and consequently lead to a lack of expertise transfer in certain areas. That being said, a certain level of local protectionism could reduce global competition, and result in “better” contract terms for the execution of projects.

4. Is there any sustainable aspect of these new investments?
   Some countries/regions have anticipated their activities in terms of improving and/or extending their infrastructure to accommodate the forthcoming gradual upswing of the economy. Short-term investment plans are likely to sustain and support the upswing, whereas long-term investments need to be balanced with the sensitivity of inflation risk and the risk of non-completion of heavy mortgage-leveraged projects. Improvements in the energy infrastructure sector will contribute to a sustainable and accelerated approach for the future low-carbon economy.

Emanuel Baltis
Chief Underwriting Officer Engineering Lines, Zurich Global Corporate
Projects under construction are covered by builder’s risk policies taken out by the Main Contractor or by the Owner, usually for the benefit of all participants including Sub-Contractors, Manufacturers and Consultants. Whilst all builder’s risk policies basically provide coverage for accidental damage occurring during construction i.e. until work has been completed, the exposures vary according to the type of project – civil and building works on the one hand and industrial projects on the other. Civil engineering and building projects are usually more vulnerable to natural perils whilst under construction than after completion, and are also more subject to collapse (e.g. underground works, bridges). For this type of project, exposure remains high throughout the construction period. For industrial projects that mainly involve the assembly and testing of electrical and mechanical parts, peak exposure occurs during hot testing at the end of the construction period. The more sensitive and sophisticated the process or the machinery, the higher the risk of loss during testing. A construction portfolio contains a mixture of these two types of project, the first CAR (Contractors All Risks) generally being more exposed to natural perils and the second EAR (Erection All Risks) being more subject to human factors and usually involving shorter construction periods. A balance should be reached between the premium income of the portfolio and the maximum possible loss. There are examples of losses reaching amounts close to the total value of a contract: destruction of a building by fire at the end of the construction period, catastrophic collapse of a tunnel involving surrounding properties, and so on. Although stimulus packages are expected to include mainly (at least in the first stage) small to medium-sized civil engineering projects, some of them may jeopardize the balance of a portfolio if the type of project is unusual and has not been properly assessed. As the development of stimulus packages progresses, the average project size will probably increase along with the project complexity, which could also lead to unbalanced portfolios. It is therefore very important to assess each project individually and to adjust the scope of cover to each type of project. In this respect, particular attention should be paid to the following points: Third Party Liability A separate section is often included in construction policies to cover damage to properties belonging to third parties occurring as a result of the works. This exposure can be high in urban areas, particularly for projects involving underground works, even if contract values are small. There are numerous examples of collapsed trenches, tunnels and diaphragm walls causing extensive damage to surrounding properties. This risk should always be carefully assessed and the monetary amount of such cover should always be limited to a small percentage of the contract value. Existing Property Similarly, when refurbishment or extension works are carried out, damage can occur to the existing properties contiguous to the works. The exposure can be high, especially when the existing properties are occupied or operational during the works. Human error A significant proportion of losses occurring during construction are due to human error, in terms of both workmanship occurring on the site and design. The experience of contractors and designers, as well as the scope of the studies carried out during the planning phase, should therefore always be checked. The need to launch stimulus packages rapidly may sometimes result in shorter planning and tender phases, hence an increased risk of error resulting in damage to the works. With regard to civil works in particular, good risk management practices provide the best protection against losses such as fire (for buildings), flooding (for roads and surface works) and collapse (for underground works). Advanced Loss of Profit or Delay in Start-Up The loss of anticipated revenues sustained by private owners can be insured under a separate section of a builder’s risk policy known. However in the case of stimulus packages involving public owners, widespread demand for such coverage is not anticipated and therefore this newsletter does not examine the topic in any detail.
In most cases, a project is insured on a stand-alone basis with specific terms and conditions quoted by the local market for a small to medium-sized projects or by the international market for major projects. The coverage available is very similar worldwide except in the USA where the scope of cover is strictly limited to material damage to the works occurring during the construction period, usually excluding any kind of third party liability and post-completion coverage (so-called ‘maintenance’ cover). Another singularity of the US market is that builder’s risks are sometimes handled by the property market with a view to securing the operational policy upon completion of the project. In some cases, a project can even be insured on an annual basis as part of the Owner’s property programme. The numerous infrastructure projects announced in the USA should favour the ‘stand-alone’ approach and the involvement of dedicated construction teams.

In view of the amounts allocated to infrastructure projects under stimulus packages around the world, insurers anticipate opportunities. In some markets, new cover has already been announced to insure the specificities of infrastructure programs under stimulus packages: this is the case in the London market and in the USA.

On the treaty side, SCOR Global P&C’s Engineering team believes there is a considerable chance that clients will benefit in their markets from these governmental investments in infrastructures. They have already helped to alleviate the downturn of new construction in some markets in 2009. The real benefits, however, are expected in 2010/2011.

Civil engineering know-how is now in great demand (as was mechanical expertise 10 years ago, during the power plant boom and 5 years ago in the oil industry). Most of this demand can be met with existing programs, and in some cases new programs are being created with specific dedicated underwriting teams.

The profound technical background of SCOR Global P&C’s underwriting teams, which include experienced civil engineers, is a key asset for the creation of sustainable solutions with our clients.

In the short-term, stimulus packages announced by governments lead to medium-sized infrastructure projects. With the economic recovery, major mid-term investments will come back to large private industrial projects, which will have an impact on facultative business. These opportunities will be examined in a future newsletter dedicated to large infrastructure projects.

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