

Insurance of Large Risks in Developing Countries

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Developing countries of course have their large risks but these have only arisen in recent times. Most of these countries have emerged from a colonial past characterised by reliance upon the export of raw materials, and the import of ready-made goods of every kind and risks of certain importance were a rarity, save perhaps in respect of warehouses, department stores, etc.

The considerable state of backwardness in which most of these countries were left when they became independent required tremendous efforts to eliminate the causes of their under-development. To achieve this goal, they had first to transform their basic structure from the traditional pattern of subsistence economy to a modern economic sector, based on the utilization of their agricultural and mineral resources, and the building of a domestic potential for industry to serve as import substitution and eventually for export purposes.

To accelerate the transformation of their subsistence economy, and to achieve some degree of economic self-reliance, developing countries had to rely upon modern technology. A great deal of their financial resources have been spent to acquire modern technology in the form of equipment, machinery, means of transportation, means of production, know-how, etc.

Importing technology and goods with a high technological content has produced, over the years, new and larger risks to the insurance markets of these countries than ever existed before.

Let us first consider the sectors recipient of modern technology in developing countries, and what types of risks have emerged therefrom.

In the agricultural field which remains the predominant sector in the economic structure of most developing countries, the impact of new technology on agricultural production may be slight, in creating purely agricultural risks which could be subject to insurance. However, the application of a package of technological inputs to expand and rationalise the agricultural sector such as improved irrigation and drainage systems, energy supply, fertilizer and pesticides production, farm machinery, storage and transportation facilities; have created a considerable number of risks, some of which are very large. A salient feature of some of these technological inputs is that they require substantial capital investment, such as the construction of dams, the building of power stations, the setting-up of fertilizer industries etc..

Some developing countries, in order to support their agricultural investments, also set up agro-industries based on raw materials from their agriculture, grass-land, forests, and seas. The former include processing foodstuffs, textiles, wood, rubber, leather and dairy products. Many of these agro-industries are normally carried on a small scale, yet some of them require very large capital investments, and a great deal of technological inputs such as the textile industries, rubber manufacture etc..

In countries endowed with deposits of mineral resources, such as petroleum, iron ore, phosphates and copper, large amounts of money are invested in the prospection, exploitation, processing and transportation of these resources. By contrast to the agricultural sector, mining industry generates in most cases risks with substantial values, and high technological components (drilling rigs, offshore rigs, pipelines, iron and steel plants, aluminium complexes etc.). Also on the mining side, technological changes are very rapid, resulting in considerable increases of investments involved, and continuous change in the characteristics of the risks.

One of the choices made by developing countries for rapid growth is industrialisation. For many people the terms industrialisation and technology are almost synonymous. As a large proportion of the expenditure of developing countries is devoted to imports (equipment goods, machinery, intermediate goods, machinery, and foodstuffs) many of these countries have to build their own industries for import substitution. Such new industries encompass a wide range of diverse risks, and in some cases they follow a trend of concentration of values evidenced in the insurance policies covering their risks.

Another field where large investments and modern technology are involved in developing countries is transportation. Many of these countries, in order to accommodate their internal and external trade, and to encourage tourism and transit business, invest extensively in modern means of conveyance, such as large aircraft, oceangoing vessels, supertankers, container vessels, etc. Such modern means of conveyance are characterised by optimum transportation capacity and maximum possible speed. Thus the values in property and liability which are at stake are bound to be tremendous.

Finally in their endeavours to promote growth, and to improve the standard of living of their people, developing countries spend a great deal on infrastructure works such as urbanisation, road building, power stations, water works, sewerage, etc. Such efforts generate a great number of risks which require insurance protection, and since some of these development works rely upon highly-sophisticated technology, one can imagine the substantial amounts of money involved in such projects.

This enumeration of areas where both large sums of money and modern technology are involved is intended to highlight the fact that large risks are not the unique monopoly of developed countries and developed societies. It also serves to pinpoint the fact that the more developing countries indulge in growth efforts, the more they are liable to have larger risks requiring insurance protection.

Modern technology and the size of risks in developing countries

One of the typical characteristics of the economy of developing countries is the scarcity of capital and the relative abundance of labour. One could therefore rightly expect that in the economic planning of these countries, emphasis would be laid on labour intensive patterns of production rather than on those which are capital intensive. This has not generally been the case. The basic reason for this situation is that developing countries have to rely upon modern technology for enhancing their growth. Since modern technology is generally designed for large scale production and services, a solution reflecting the case of the countries which have developed this technology and where capital is relatively abundant,

developing countries had no alternative but to adopt the capital intensive technologies, with the result that the modern sector of economy became the domain of relatively large values and liabilities.

A second factor leading to the correlation between modern technology and large values involved in developing countries, is that such technology is mainly acquired/foreign capital either by borrowing from foreign capital markets, through joint ventures with foreign capital, or through patents. Consequently the costs or investments associated with such loans or joint ventures are bound to be of a certain magnitude, particularly in cases where a government is involved as a partner in such deals.

A third factor increasing the values at risk in respect of projects with considerable technological inputs, is the inflationary spiral prevailing in countries exporting technology. It has for some time been a problem for insurers in developing countries to adjust insured values of such risks to cope with the increase of prices of such inputs.

Modern technology and exposures

Modern technology injected into developing countries not only influenced the size of some risks, but also produced a change in the degree of exposure to losses.

The increasing scale of industrialisation, the construction of large storage facilities, the use of mass transportation as a means of conveyance, the trend to construct high-rise building with air-conditioning facilities; all these factors have increased loss probabilities.

However, the most noticeable change is in respect of the extent of damage when a loss occurs, or in other words the Estimated Maximum Loss (EML). The concentration of values on one risk is the most responsible factor in the increase of the EML. As recently as ten or fifteen years ago, many developing countries did not think of tens of millions of dollars exposure. Today such exposures of 100 millions dollars are commonplace.

The progression of the EML in developing countries is aggravated further by the increasing phenomena of concentration within industrial zones and condensed city centres. Also the import boom in many developing countries has led to large concentration of values in the storage areas. A clear example of such accumulation, is the fire that broke out in Um Said in Qatar in 1978 and which resulted in a loss of about 150 million rials, that is to say about 50 million US\$. As the pattern of development in the countries of the third world tends to mass their projects in urban areas where easy transportation is available, such type of accumulation is bound to aggravate in the future.

Also under the cumulative loss categories are natural phenomena which hit developing countries such as earthquakes, hurricanes and floods. The best examples of such events are the earthquakes of Guatemala and Nicaragua, and the hurricanes of Honduras and Mexico which resulted in massive destruction involving many risks at one time.

Another type of accumulation which is beginning to gain momentum in developing countries is the clashing between different covers in respect of one risk such as the cover for fire and loss of profits, machinery breakdown and business interruption, hull and cargo etc. Here one has to indicate that such type of accumulation is still relatively limited in developing countries, mainly because such covers are not accepted on large scale by the insurers. Yet it is unlikely that these insurers would be able to resist such demands for cover for a long time.

In addition to the technological, and accumulation factors increasing the degree of EML, there are also various considerations aggravating the exposure to losses. One of them is the technical backwardness in most developing countries. The absence of industrial and technological traditions, the low-level of managerial capacity, the dearth of trained and experienced labour all these factors contributing to the increase of the EML, and the lessening in efficiency of efforts of loss prevention and loss minimization.

Also the lack of sufficient infrastructure in many developing countries renders the systems of risk prevention often unreliable.

The increase in the loss probabilities and exposure in developing countries as a result of technical progress is clearly reflected in the loss ratios of classes of business having something to do with technology such as fire, engineering, etc. The acute concern here is that the loss potential rises at relatively high rates, leading often to the over-straining of the portfolios of local insurance companies and disturbing the equilibrium of the global portfolio of their local markets.

Numerical importance of large risks in developing countries

Although the number of large risks has been steadily increasing in most developing countries, their numbers have not reached proportions which would allow a meaningful spread in one country. For instance, there could, in a developing country, be one or two large oil refineries and a few car assembly plants. The restrictiveness of the number of large risks of identical nature does not mean that they are uninsurable. Yet obviously this clearly presents disadvantages for the insurer, particularly the lack of spread which is the basis for insurance, and the inability to draw sufficient experience necessary to decide upon levels of rating and acceptance.

On the other hand it is observed that the pace of increase of values insured in respect of large risks is not matched, in the majority of cases, by a corresponding increase in the number of large risks. This development has the effect of making the total premiums received by the insurer only a fraction of his exposure, because losses are prevented from being spread over a considerable number of risks.

Large risks in relation to the overall business written in developing countries

If we try to read into the distribution of insurance business written in developing countries, we will not notice that apart from risks where there is some compulsion to insure, such as motor third party liability, the bulk of the business written consists of risks of above average sums or exposures such as industrial fire, storage risks, marine cargo, engineering risks, hull, aviation, etc.

By contrast with developed countries, ordinary or conventional risks in developing countries account for a minor part of of the business covered by insurance.

The reason for this situation is that in spite of the various efforts to modernize the economy of developing countries, there still remains a major traditional sector; rural, craft works and small commerce which hardly cover themselves by insurance either because the risks involved are minor or because of the existence of some other arrangements serving as alternatives for insurance. On the other hand, the lack of insurance awareness, and the low income of the population are elements which do not favour the demand for insurance, especially for simple risks such as fires in dwellings, personal accident, simple third party liability etc., such categories where the size of risks is reasonable and the results are generally profitable.

In this respect, a word of caution seems necessary. It is not suggested that the insurance portfolios in developing countries are overwhelmingly composed of large risks, since this would deny the statement that their number in each market is still small. In fact, not all industrial fire, engineering, hull, or aviation are necessarily large risks. Yet on the other hand one cannot describe these classes as ordinary either.

Thus one can safely assert that insurance business written in developing countries is predominantly composed of above average sums and exposures with some gigantic risks which are few in number but which exercise an overproportional influence on the performance of insurance portfolios in these countries.

Areas of large risks in developing countries

The global expansion of demand for insurance as well as the diversification of the risks covered in developing countries are both an indication of economic progress.

However, as mentioned earlier, the protection of insurance in developing countries still seems to be confined to specific fields such as industrialisation, urbanisation and transport. The following is a list of some risks which are likely to be covered in the markets of developing countries.

A. Fire risks

1. Large blocks and high-rise buildings used for offices, etc. with very expensive installations such as air-conditioning, computers and office equipment. Also luxury hotels with various costly fixtures and fittings destined for the tourist industry.
2. Large industrial units such as **textile** and spinning industries, petrochemicals, oil refineries, iron and steel plants, car assembly units, foodstuffs and the drug industry.

B. Engineering risks

As most developing countries are undergoing vast rural, urban and industrial development, very large projects are carried out such as the erection of hydroelectric power stations, dams, highways, bridges, the construction of petrochemical installations, mining enterprises, the setting-up of industry for

processing local products. The need for engineering insurance is prompted by the need to cover these ambitious plans which cost a great deal of foreign and local currency, often under loan programmes.

C. Marine and aviation branches

Great efforts have been made by an increasing number of developing countries to secure their international transport system in an attempt to lessen their dependence on foreign transports services. They acquired their own marine and aviation fleets. As vessels and aircraft have grown in size and complexity their values have risen substantially. Added to this is the amount of potential liability which they have to cover. Modern vessels or aircraft together with their cargoes or passengers represent a tremendous concentration of sums at risk.

D. Public liability covers

a concept

Public liability is relatively new and could produce large risks in developing countries. Until now, little attention has been paid to this area due to the lack of claim consciousness among the population of developing countries, and the non-existence of laws defining and specifying the legal liability in many of these countries.

However, economic and social factors have to a certain extent had the effect of a catalyst on the wake of claims consciousness. The introduction of compulsory motor third party liability insurance was perhaps responsible for this evolution. Public anger, aroused by some new buildings in a developing country crashing, led the government to impose third party liability insurance for building contractors. In some developing countries products liability insurance is taken for merchandise destined for export. Undoubtedly the size and extent of covers in this class of business will depend upon the growing prosperity of people, allowing them to sue for liability, and the degree of escalation in awards granted by the courts.

Premium income in developing countries, and share thereof corresponding to large risks

As a result of the intensive efforts deployed by developing countries to ensure quick economic growth and expansion, the insurance premiums written in their markets have been growing progressively from year to year. In many cases the premium income has been almost doubling every five years, witnessing thereby a large increase in local investments in these countries.

Apart from motor insurance which has been rendered compulsory in respect of its third party liability, in many developing countries the main classes which have benefited from growth efforts are industrial fire, miscellaneous business, which includes engineering and contractors' risks, and marine hull and aviation. For marine cargo, the increase or stagnancy of its premiums depends, to a considerable extent, upon the attitude of liberty or restriction adopted by the authorities in these countries with regard to the insurance of cargo locally or elsewhere.

Clearly when we point to industrial fire, engineering and contractor's risks, marine hull and aviation, as the main beneficiaries of the economic development, it is evident that we are referring mainly to large scale risks are the principal source of premium income.

In marine hull it is common that the major part of the premiums come from large tonnage rather than small hulls, fishing boats, port barges etc. The same also applies to aviation where the bulk of the premiums emanate from fleets.

On the other hand, if one compares the growth of premium income emanating from large risks with that of conventional business, it can be observed that the premiums corresponding to large risks grow considerably quicker than those corresponding to conventional business.

The fact that a substantial proportion of the premium income in developing countries emanates from a limited number of large risks is a factor of anti-selection and imbalance which operates against the insurers in these countries. The lack of sufficient volume of conventional business as opposed to large risks casts also a threatening shadow over the prospects of achieving some balance between premium income and exposure, and prevents the ordinary business from playing its customary role of cushioning the great losses which large risks may be involved in.

Growth of premium income viz exposure in developing countries

It is disturbing to note that the rate of increase of premium income in developing countries is generally less than the rate of increase of exposures expressed in insured values or EML's, even though the rates of increase of premiums have been relatively high (10 to 20% per annum, and even more in some countries).

The widening gap between exposures and premiums, and the anti-selection characterising the portfolios of insurers in developing countries are both responsible for the current phenomena in these countries where the exposure on one single risk may exceed the total premium income of the branch, or even the total premium income of the market.

Experience of large risks in developing countries and their impact on general insurance results

Despite their relatively low premium earnings, the anti-selection present in writing a small volume of ordinary and simple risks, and the lack of balance between premiums and exposures, developing countries still have in general better claim experience than developed countries with, of course, a few exceptions. In the fire category, the results recorded by most developing countries show a more favourable loss ratio on the whole. This is mainly due to the early stages of industrial development in these countries and to their modern industrial infrastructure free from outdated factories, worn out installations and unprotected systems.

On the other hand, there is definitely less accumulation of values per area since space in many developing countries there is no yet a problem causing vertical rather than horizontal expansion, as is the case in developed countries. Finally, loss of profits' insurance which can be combined with fire cover is not very frequent in most developing countries in view of the refusal of insurers to commit themselves to such hazardous cover, a matter which makes fire losses much less expensive.

In the engineering field, if the degree of risk in respect of property damage is more or less similar to that of developed countries, we should not forget that in the section of liability to third party it is far less important in developing countries, due to several reasons ranging from lower geographic concentration to lack of claim consciousness. Also the business interruption cover (loss of profits) is seldom accorded to the insured in most of these countries.

For marine hull and aviation fields, the experience of developing countries in respect of property damage and liabilities are basically the same as in developed countries. Variations may, however, exist with regard to the value of risks, the geographical scope of navigation, maintenance, repairs, etc.

However, on a completely different level, the generally good results characterising business written in developing countries may be due to the higher premium rates which usually prevail in developing countries, coupled with the inexistence, or small scale of competition between insurers. This market discipline avoids rate reductions. Also in some classes of business, such as hull, aviation and important fire and engineering policy, direct insurers in developing countries do not lend themselves to speculative risk evaluations but resort to quotations from their reinsurers abroad.

This favourable performance is naturally not expected to continue for long. The trend in developing countries towards bigger production units, the application of new materials, sociological and psychological phenomena like increased materialism, carelessness, speculation, corruption and crime, may all affect the good claim record of these countries.

Already some signs of deterioration can be seen in a number of developing countries where intensive growth efforts are undertaken. A marked rise in the claim frequency is often associated with an increase in the size of some losses. Such risks arise in particular areas where greater accumulation of values take place, such as large warehouses, and big department stores. Also in marine hull and aviation, frequent large losses occur, and follow the world experience in this respect.

Large risks and the risk bearing potential in developing countries

It is obvious that no wise insurer can grant cover for an amount exceeding his risk bearing potential. This potential is composed of his net retention plus underwriting limits allowed by his automatic reinsurance facilities. When the sum insured is higher an additional risk bearing potential has to be sought. In the case of a risk for which the risk bearing potential of the insurer is lower than the amount to be insured, he has to obtain co-insurance or facultative reinsurance from other, local insurers in respect of the balance of cover. Depending on the local capacity available, he may finally have to resort to facultative reinsurance abroad.

Local capacity on a national level is composed of the aggregate net retentions of insurance companies operating in the market, plus the aggregate underwriting limits of their reinsurance treaties.

Clearly national markets in developing countries can meet all local demand for cover for small and medium sized risks, since the aggregate retentions plus the automatic reinsurance facilities can easily absorb the greater part of these risks. However, the question now has to be asked as to what extent the national markets in developing countries are able to provide risk bearing potential to cope with the requirements of larger risks?

In most developing countries the domestic insurance industry is of relatively recent origin. Before its emergence, foreign insurance provided practically all the cover for local risks, by placing risks directly abroad or through agents or branch offices on the spot. As a considerable number of foreign insurers used to operate in these countries, the amount of insurance offered was substantially high. Thus no particular problems were met when a large risk had to be covered. In the case of exceptionally large risks, which single foreign insurers were not able to cover totally, they were split on a co-insurance basis between insurers operating in the market. In cases of risks which, by their magnitude, or because of hazards involved, were beyond the capacities of local agents, resort to direct insurance abroad was possible, and international insurance could of course cope with any extra cover requirements.

The situation has completely changed with developing countries gaining their independence, and with their determined desire to promote the national character of their insurance markets. Most of these countries, while prohibiting direct insurance abroad, took steps to encourage national initiative in insurance. Different methods were applied to reach this objective, ranging from mere strict insurance control to making the insurance sector a state monopoly. One common factor characterises these measures - they worked to the detriment of foreign insurance. The total or partial withdrawal of foreign insurers from the markets of these countries has no doubt accelerated the emergence and growth of the domestic insurance industry. However, at the same time the number of insurance units has been reduced, with the result that the density of insurance offer has dropped sharply at a time when risks are spiralling in value and exposure.

The situation is aggravated further in countries which, in their conviction of rationalising their insurance markets, took measures aimed at the concentration of the number of insurers such as amalgamations, mergers, transfer of portfolios, cancellation of registration etc. Such measures may have been useful in improving market conditions, but in most cases they resulted in the shrinking of risk bearing capacity on the national level. Even if we thought that concentration may lead to larger units able to carry larger retentions and benefit from larger reinsurance facilities, the experience of several countries has shown the failure of newly combined entities to reinstate the aggregate capacities of the companies which came under the merger.

In addition to these factors leading to the concentration of the risk bearing capacities in many developing countries, there are others closely related to some typical features characterising the emerging insurance industries in this part of the world.

Features of the domestic insurance industry in developing countries and their effect on their risk bearing capacities

1. Small risk capital. Capacity is a mathematical function of risk capital, constituted of paid-up capital and free assets held by insurers. The more important the risk capital, the more capacity the insurer can provide. As most developing

countries are short of capital resources, the immobilisation of capital for investment in insurance is beyond their reach. In addition, in view of the low yield of capital invested in insurance compared with other types of investments and the general desire of paying important dividends to shareholders, there has been a general failure to attract important more capital for insurance companies and to earmark important free reserves. Due to the lack of risk capital backing, domestic insurers in developing countries react with great caution towards large risks to avoid being exposed to substantial claims; thus opting for small acceptances out of these risks.

2. Early stages of development. Most of the local insurers in developing countries are comparatively young and have little experience. They are not willing to indulge in big business because of the large size of possible claims.

3. Scarcity of expertise. The insurance of large risks involves difficult technical problems which would require very experienced staff. In the case of young indigenous insurers there is a scarcity of staff to deal with large risks. Under such circumstances, the local insurer is likely to avoid committing himself to such risks, thus lessening his acceptance to the minimum possible, and reinsuring the balance.

4. Stringency of automatic reinsurance facilities

Almost all new companies in their initial stages have unbalanced portfolios - that is to say their premium income is not high enough to cope with undertaken liabilities. Such imbalance is more noticeable in the context of developing countries than anywhere else because of the exiguity of their insurance markets which do not produce enough premium, and do not allow sufficient spread. In view of such imbalance they have to carry small retentions, thus requiring extensive reinsurance facilities. However, the lack of balance in a portfolio also works against the reinsurer who is obliged to restrict automatic reinsurance facilities available to this ceding company, both in respect of scope and upper limits. Thus risks of an unconventional nature or large size do not find, or do not find sufficient automatic reinsurance arrangements to absorb the surpluses.

These inherent characteristics of the local insurance industry in developing countries combined with the side effects of the transitional period which their markets undergo, tend to limit the creation of local capacity for the ever-increasing values at risk.

What happens then when a large risk requires cover? In practice this problem can be solved either by insuring such risk directly abroad, or covering it locally but resorting in the meantime to foreign reinsurance whereby all, or the greater part of, the risk is transferred to the reinsurer who virtually becomes the real carrier of the risk. Both solutions can provide immediate and large capacity, but undoubtedly they are detrimental to the well-being of the domestic insurance industry, as will be explained later.

a) Large risks insured directly abroad (Non Admitted Insurance)

Insurance laws in the majority of developing countries reserve the right to grant insurance cover to companies registered in the country where the risks are located. This policy, motivated by issues related to the promotion and growth of local insurance industry, does not entail too many problems for small and ordinary risks. This restriction may not suit large risks which often involve covers greater than what the local market can afford because of the limited capacity and experience of the young insurance industry in many developing countries. Local insurance authorities are therefore bound in some instances to allow the cover of very large or hazardous risks directly abroad. This practice has until recent times been quite frequent in certain categories of risks such as marine hull, aviation and large engineering and industrial risks. However, more and more developing markets are abandoning this practice, preferring to call on reinsurers rather than lose all domestic control on such risks.

There remains, however, the non-authorized direct insurance abroad. The frequent imbrication of foreign investments in all forms in the domestic economy sometimes encourages direct insurance abroad. This is the case, for instance, of multinational corporations which do not entirely fall under the national jurisdiction of the country where they operate. In view of the usual shortcomings of the local insurance industry and large values at risk, they arrange insurance covers with foreign based companies.

Such transfers of insurable materials to foreign markets represents a loss to the insurance markets of developing countries. It deprives them from an important premium volume emanating from large risks, prevents them from making their own experience of such covers and finally restricts the development of their acceptance capacity.

II. Large risks insured locally in developing countries

In spite of the various factors which make the local coverage of large risks unattractive to the young domestic insurance industry in many developing countries, surprisingly one finds the major part of such risks locally covered by insurance.

This situation seems to have developed as a result of the prevailing conception in these countries that investment in insurance is meant to provide strong backing to the national effort of development and growth. Thus covering risks directly abroad would defeat the essence and raison d'être of local investment in insurance.

On the other hand, the fact that many domestic companies serving the insurance markets of developing countries are of public and semi-public character, reinforces the feeling that it is their duty to provide cover for all domestic risks at all levels even if this would entail, on their part, some sacrifice in their freedom of action or liberty of judgment as underwriters.

A third factor leading to the coverage of large risks locally is the desire of the insurance supervision authorities to exercise some de facto control over the important domestic risks in the country, which of course would not be possible if such risks were directly covered abroad.

If insurers in developing countries had to limit their acceptance of large risks to their own retentions, one of their essential activities would be paralysed, and the bulk of these risks would go to non-admitted insurers. Obviously, the complete local cover of large risks has only been possible with the help of reinsurance. There is no doubt that foreign reinsurance is solving the various problems of covering such risks, spread and capacity. It can also make expertise available. However, in gaining such benefits other problems are created to the direct companies since local coverage of large risks implies that they have to be underwritten, the ratings fixed, policies issued, claims settled and reinsurance arranged etc. Clearly the implementing of such steps creates greater difficulties to new and small insurance companies than to the big and old established ones.