Infrastructure debt
Insurance regulations in Asia

March 2019

For professional investors only

Across Asia, new risk-based insurance regulations are in various stages of development. From experience in Europe, we know that implementation of these new rules could have a profound impact on insurers' investment strategy.

In the fast-growing Asian insurance market, a lack of appropriate long-term fixed income investments is slowing the growth of long-term insurance products. Insurers are thus increasingly turning to infrastructure debt to enable the expansion of their books of long-term business, a trend which is supported by the growing need for infrastructure financing across the region.

This has implications, because infrastructure debt is a long-term asset class, typically invested on a buy-and-hold basis. The way in which the various upcoming RBC regulations in Asia treat it may thus have a significant impact on its attractiveness for insurers.

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The time is ripe for infrastructure investments in Asia

More infrastructure is needed

In 2017, the Asian Development Bank (ADB) estimated that Asia needs to invest USD22 trillion by 2030 to plug current gaps in infrastructure and ensure that these don't act as a drag on future growth. By their estimates, this equates to 5.1% of projected GDP. For an undertaking of this size, the need for a significant participation of private capital is pressing. Given the current limitations of public pensions, life insurers can become the key investors in the region's development. As such, Asian insurers have a crucial role to play in contributing to their region's economic growth, development and financial stability, as providers of long-term capital investment in the real economy.

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More long-term investments are needed

In Asia, the increase in living standards associated with a burgeoning middle class has heightened life expectancy and has helped create strong demand for both life insurance and retirement savings products. In many countries, this is bolstered by demographic trends, and by the lack of comprehensive coverage provided by the public pension system. Although of course business growth is a good thing in itself, it is becoming a somewhat prevalent and complex issue for insurance firms.

It is difficult for insurers to fully meet the needs of this fast-growing market without opening significant duration gaps on their balance sheets because of the limited availability of long-dated fixed income assets in many Asian markets. Currently, insurers invest substantially in medium maturity securities to add duration to their investment portfolios. To a degree, this approach works on a present-value basis, but it results in insurers running a significant (and persistent) interest rate risk.

In turn, this gap poses an important barrier to growth, from both an economic and a regulatory perspective. All long-term insurers have a finite risk appetite and they will have a limit to the amount of interest-rate risk they are prepared to take. In addition, regulatory capital systems for insurance companies often have a capital requirement for interest-rate risk. This means the regulatory capital constraint driven by the duration gap will become more pronounced as countries move to risk-based-capital regulatory systems.

This is where infrastructure investments come in. Indeed, the characteristics of infrastructure debt make it uniquely complementary to life insurers' investment objectives, providing an excellent tool for liability matching, volatility control and yield enhancement by capturing a premium over liquid fixed income instruments of an equivalent credit quality and maturity.

Infrastructure debt has the right characteristics

Long duration

Infrastructure assets have a long life, and senior debt maturities can reach forty years or more. Putting credit risk aside for a moment, the cash-flow profile of infrastructure assets has a unique complementarity with a life insurer's liability profile, which cannot easily be replicated through other forms of non-sovereign issuance. To some extent, it can mitigate the difficulties presented in Asia by the lack of long-dated assets other than government debt, and by the relative underdevelopment of financial derivatives markets.

Illiquidity premium and cash-flow stability

In addition, by acquiring high-quality infrastructure assets in local currency, insurers could better achieve their objective of cash-flow matching the long end of their liabilities, with higher-yielding assets than government debt – and without taking on unwanted currency risk.

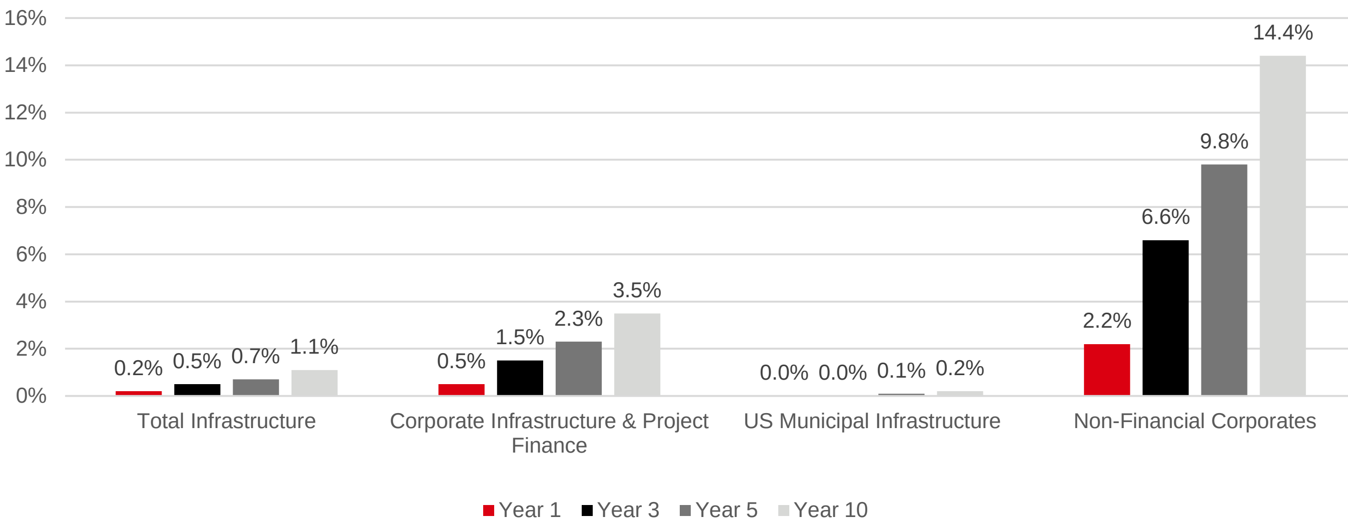
Creditworthiness

Whilst public data on infrastructure debt is relatively sparse, Moody's and Standard & Poor's have compiled comprehensive data repositories for project finance loans from respective consortia of participants in the project finance market, covering an extensive time period since the early 1980s. Both rating agencies estimate that the data collected covers more than 60% of all project finance originated.

The most important findings of the Moody's 2018 global project finance study are listed below:

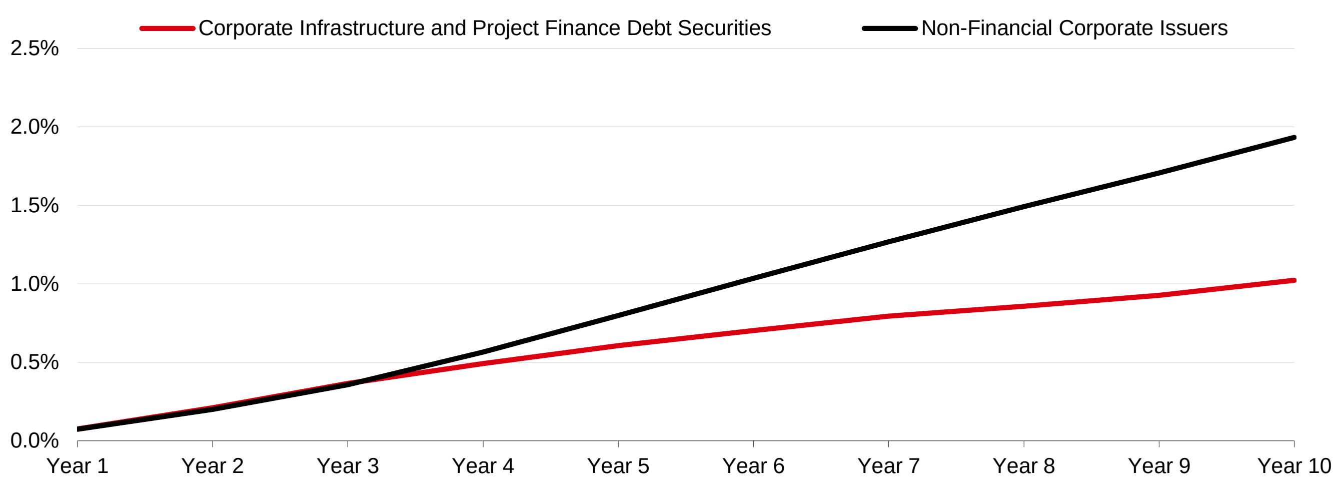
- Infrastructure project debt has exhibited cumulative default rates which are lower than corporate bonds of equivalent credit quality, and are on average consistent with low investment-grade credit quality (Figure 2).
- Marginal default rates fall over time, from levels consistent with high speculative-grade credit quality, and towards levels consistent with the single-A rating. In contrast, the trend for corporates is stable.
- Average ultimate recovery rates are high, averaging 80%.

Figure 1: Overall cumulative default rate



Source: Moody's Investors Service, September 2018

Figure 2: Average Baa-rated credit loss rates, 1983-2017: corporate infrastructure & project finance debt securities vs. non-financial corporate issuers



Source: Moody's Investors Service, September 2018

Default and credit loss rates evolve over time, and past rates are no guarantee of future rates

Stable and robust characteristics

Because of the nature of the projects, infrastructure debt exhibits characteristics and structural protections not commonly found in listed corporate bonds, such as:

- The use of a legal structure to specifically ring-fence the assets being financed, whose net cash flows will be the only source for servicing and repaying the debt;
- Contractual arrangements designed to manage and allocate transaction risks to the most suitable parties (e.g. construction risk substantially transferred to a construction contractor);
- Long-term regulated or contractual cash-flows, often with explicit or implicit government backing;
- Detailed financial model used to evaluate the resilience to severe downside stress scenarios, and extensive due-diligence reports for the benefit of the lenders;
- Strong forward-looking covenant structure which controls the scope of the project and allows proactive performance monitoring and access to management over the life of the financing (providing potential early signals in case of a project's deterioration);
- Seniority in the capital structure that offers a strong first-ranking security package over the assets financed; well documented step-in regime and inter-creditor arrangements, providing creditors with greater power to alter the outcome in case of default;
- The strategic or essential nature of the project typically underpins its operational sustainability and, in certain situations, may include scope for government intervention and support.

Diversification benefits to any portfolio

Many of the characteristics discussed above underpin the resilience of the asset class and its robust credit characteristics, and partly explain its lower correlation with both business cycles and other markets. Significant empirical evidence also supports the claim that infrastructure debt has historically been less volatile than corporate debt of an equivalent rating and maturity. As a result, analysing the impact of including infrastructure debt into an insurer's asset allocation typically tends to show an improvement in risk-adjusted expected returns.

However, we don't think this is the best measure of infrastructure debt's diversification benefits, for several reasons.

First, the asset class is typically employed as part of a portfolio of matching assets that are held against long-term liabilities. Its role is to provide yield enhancement and credit-risk diversification more than a reduction of mark-to-market volatility.

Second, the assets are usually purchased and accounted for on a buy-and-hold basis. If the insurer applies amortised cost accounting, the value of the assets will not fluctuate alongside financial markets. To the extent infrastructure debt is a replacement for lower-yielding matching assets that were also accounted for at amortised cost, there will be no reduction of P&L volatility for the investor.

Rather than the reduction in overall portfolio volatility, we therefore think that the reduction in portfolio expected loss is a more useful measure of the diversification effect of infrastructure debt. It captures both the credit diversification benefits and the higher expected recovery rates of infrastructure debt which, as we saw earlier (Figures 1 and 2), are both well-documented.

How Infra Debt is treated in Europe

Europe has introduced specific, lower regulatory capital requirements for well-structured projects, because of the importance of infrastructure for countries' economic development and the regulators' wish to encourage long-term investors (such as life insurers) to finance infrastructure. The default and recovery statistics of high-quality infrastructure projects are such that they justify lower capital requirements.

In Europe, Solvency II thus has a special set of capital charges for infrastructure debt and equity which "exhibit a better risk profile than other equity or debt instruments" for high-quality projects that satisfy a list of requirements in terms of structure and soundness. To enable this, European regulator EIOPA has created a separate Qualifying Infrastructure Investment asset class. The Qualifying Infrastructure Investment calibration defines structural tests for each new potential investment, which focus on the project's ability to generate predictable cash-flows and withstand stressed conditions, and explore the regulatory environment and the contractual provisions protecting investors. The calibration also provides a clear risk-management framework for the investments and their long-term management. Investments where risks cannot be properly identified, managed and monitored are excluded from the treatment.

EIOPA's introduction of a separately-defined infrastructure asset class has already had a significant positive impact on infrastructure investments in Europe. Its clear and consistent definition of "high-quality" projects provides helpful guidance, not only for insurance investors, but also for procurers, arrangers and sponsors when structuring and bringing projects to the market. This has created a virtuous cycle of improving credit quality, comforting investors in the knowledge that they are purchasing sound assets from a risk and regulation standpoint. We expect the next step will be to incorporate sustainability in prudential requirements as the European Commission's recent Action Plan on financing sustainable growth is looking to explore how banks and insurance companies can contribute to funding projects that will ensure the transition to a more sustainable economy, where justified from a prudential point of view.

In Asia, regulators are still developing equivalent systems, and consulting with the industry, but preliminary trends are encouraging for infrastructure investments.

Asian Regulatory environment – trends and overview

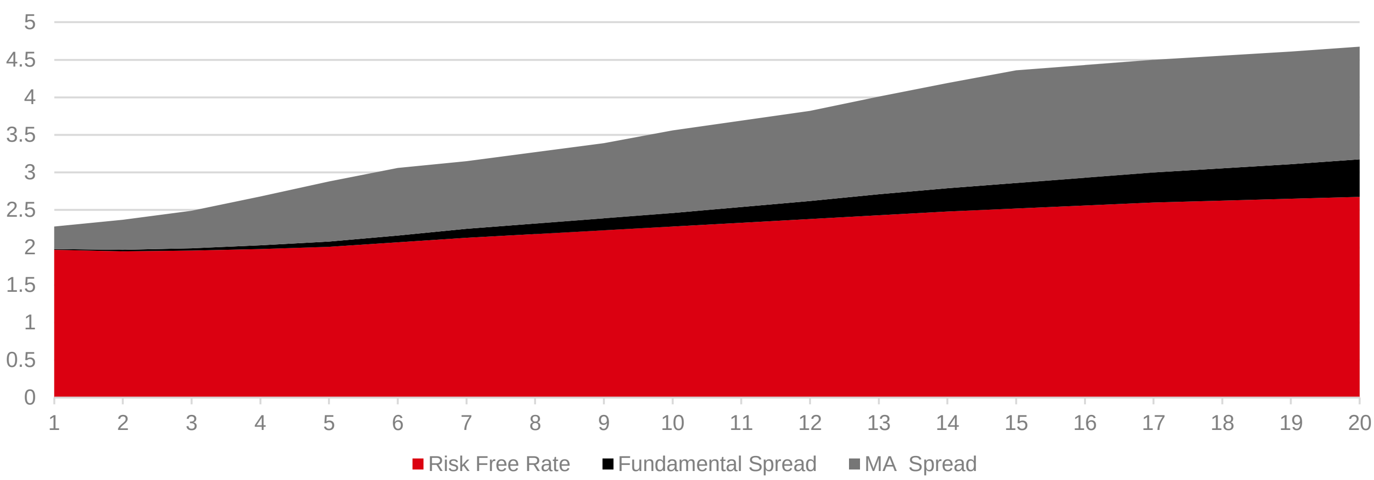
A number of Asian countries are working on new regulatory capital regimes for insurers, typically referred to as risk-based capital (RBC) systems. Singapore has had a version of RBC in place since 2004, Australia implemented LAGIC in 2014 and China has recently implemented C-ROSS. Other countries with RBC regimes in place include South Korea, Thailand, Indonesia and Malaysia. A number of countries are working on revisions. Below we discuss some of the developments in Singapore and Hong Kong as they pertain to infrastructure debt.

Singapore

RBC2 in Singapore has been in development for several years. Two Quantitative Impact Studies (QIS) and three consultations have been completed so far, and implementation is planned for 1 January 2020. Whilst no specific treatment for infrastructure debt has been finalised to date, the Monetary Authority of Singapore (MAS) has agreed to consult the industry on the possibility of developing a capital treatment which would facilitate infrastructure investments. This could be done through specific capital treatment for high-quality projects, similarly to Solvency II, or through the creation of a diversification benefit in the aggregation formula for capital charges.

RBC2's latest draft also contains a proposal for the Matching Adjustment (MA) treatment of portfolios designed to back specific pools of liabilities. The proposed criteria for eligible assets are more flexible than those in Solvency II but, as with the European capital requirements, fixed income assets with prepayment risk will only benefit from cash-flow recognition up to the first call date. It is typical for long term fixed rate infrastructure debt to provide for a make-whole (prepayment penalty) for investors in the event of voluntary prepayment. This provides a substantial disincentive to prepay. There are, however, some circumstances (particularly tax and force majeure type events) that can lead to prepayment at par. Each investment may therefore need to be analysed to determine whether it would qualify for the MA. The MA spread is calculated by taking the credit spread over the risk-free rate and deducting the part of the credit spread that compensates for default risk and downgrade risk. In Solvency II, that compensation is known as the fundamental spread (see chart below).

Figure 3: Derivation of MA spread from yield of the matching portfolio

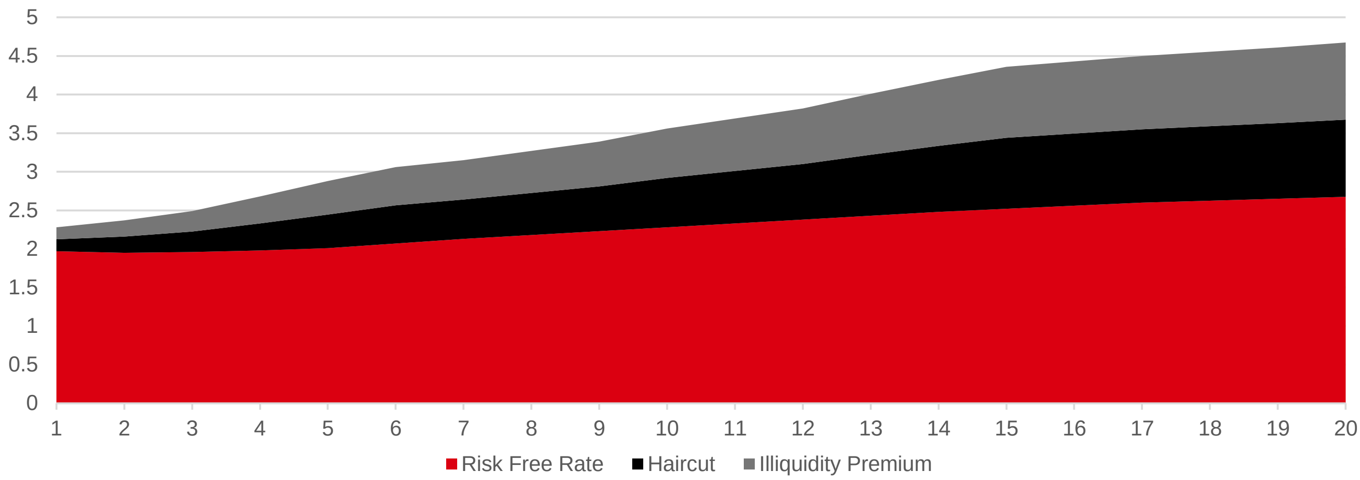


Source: HSBC Global Asset Management, as of 15 March 2019

For non-MA portfolios, another component in RBC2 is currently under consideration which could be supportive of infrastructure investments: the Illiquidity Premium (IP). This is a spread to be added to the liability discount curve for non-MA portfolios. In RBC2's latest iteration, the IP is calculated by taking the credit spread over the risk-free rate and deducting 50% of that spread (Figure 4). This adjustment is calculated using a generic reference portfolio of bonds based on the holding of the insurance industry as a whole. For RBC2, MAS has determined the Reference Spread to be 110bps and therefore the Illiquidity Premium will be 55bps[1]. The actual spread will be added to the discount curve at insurance fund level based on the Strategic Asset Allocation approved by the insurer's Board for each insurance fund. This is different from Solvency II, where the same spread (Volatility Adjustment) is added to the discount curve of every liability except eligible Matching Adjustment liabilities.

[1] *MAS, Technical Specifications for RBC 2, 7 September 2018*

Figure 4: derivation of the Illiquidity Premium from reference-portfolio yields



Source: HSBC Global Asset Management, as of 15 March 2019

Reviewing the opportunity of using insurers' portfolios vs. industry-level holdings

Interestingly, the European Commission has asked EIOPA to investigate the impact of using a Volatility Adjustment based on individual insurers' own portfolios – the equivalent measure to the Illiquidity Premium in RBC2. It wants to know whether it would make sense to amend the calculation to more accurately reflect insurers' actual investment portfolios.

European Commission, "Request to EIOPA for technical advice on the review of the Solvency II Directive"
3.2 a) Volatility adjustment
EIOPA is asked to provide an assessment of the quantitative impact on the calculation of the best estimate and the solvency position of insurance undertakings of the following approaches for the calculation/application of the volatility adjustment:

- Approach 1: the application of an adjustment that takes into account the illiquidity features and/or duration of insurers' liabilities, while maintaining the current concept of representative portfolios. That adjustment may rely on different "application ratios";
- Approach 2: the application of an adjustment that takes into account the weights of own assets holdings of each insurer; that adjustment may rely on different "application ratios" depending on the level of cash-flow matching of insurance liabilities portfolios. When applying this approach, EIOPA should specify the assumptions regarding diversification benefits in the calculation of the Solvency Capital Requirement.

In addition, EIOPA is asked to review the functioning of the increased volatility adjustment per country given its purpose and suggest amendments to the measure where necessary.

EIOPA's investigation will do little to change the mind of the MAS one way or another in terms of the Illiquidity Premium, but it is a noteworthy parallel.

Hong Kong

Hong Kong has also been working towards a new RBC system for several years, although it has taken a different route from Singapore: at the same time as laying the groundwork for a new capital standard, Hong Kong decided to establish a new regulatory authority for insurers.

With the Insurance Authority (IA) now in place, the pace has picked up in developing the new HK RBC regime. A second Quantitative Impact Study (QIS) was submitted in late 2018, and a third QIS is expected by mid-2019.

The second QIS contains a specific requirement for insurers to list details of their infrastructure investments in the reporting template – both in equity and debt. Whilst QIS2 does not state any specific capital requirements for infrastructure investments, the request for this information could suggest that the IA is interested in the asset class, perhaps in order to decide whether it warrants work on a separate capital charge. Yet information on insurers' current positions – albeit valuable – only paints part of the picture. Many investors plan to significantly increase their exposure to infrastructure investments in the coming years, which will hopefully be captured in future consultations.

In parallel, the second QIS includes a module for Matching Adjustment portfolios, which did not feature in previous drafts. The proposed treatment of debt instruments contains an interesting clause pertaining to assets with prepayment risk: "For the purpose of eligible asset assessment, assets which include call options would not be deemed eligible to back liabilities included in the MA portfolio, unless it can be demonstrated that the exercise of the option does not imply a loss to the insurer and that the matching of the liability cash-flows can be maintained." Whilst no detailed interpretation is available, this language could open the door for the inclusion of infrastructure debt assets with spread compensation (or equivalent) clauses in MA portfolios.

Similarly to Solvency II and Singapore's RBC2, QIS2 also contains a Volatility Adjustment component. As with Solvency II and RBC2, it is a single spread derived from a reference portfolio. This single spread is set at 32bps up to the Last Liquid Point, before tapering down to zero, though QIS2 also requests insurers to model their adjustment with a spread of 65bps, to test the potential impact of a dynamic Volatility Adjustment.

Conclusion

There is a clear need for long duration assets for Life insurers in Asia, and the credit characteristics of infrastructure debt should make it a prime contender. Whilst the relative lack of projects of a high enough quality for Life insurers to invest in currently limits the opportunities, governments, regulators and multilaterals such as development banks are intent on developing supportive cross-border policy, legislation and regulation. As they aim to provide a more consistent and transparent framework for long-term private investment, to improve project pipelines and preparation, to bring more depth and liquidity to regional capital markets, and to incentivise long-term, illiquid investments, opportunities will grow for Life insurers to invest.

In particular, if adopted by insurance regulators in Asia, as hinted by the current drafts in Hong Kong and Singapore, a supportive regulatory-capital approach could be instrumental in catalysing a currently underdeveloped part of the market in the form of untapped institutional financing. This would give Life insurers the opportunity to both achieve their duration and diversification investment objectives whilst providing additional and much-needed long-term funding sources in Asia.

However, identifying and accessing adequate projects, but also optimising portfolios simultaneously for yield and regulatory capital, is a complex undertaking. Insurers can benefit from using the network and expertise of a proven partner, who can deliver a reliable and effective route to infrastructure debt while meeting their investment objectives and risk-return requirements.

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