

MARC RATING METHODOLOGY

FINANCIAL GUARANTEE INSURERS



OVERVIEW

The rating that MARC assigns to a financial guarantee insurer (FGI) is an Insurer Financial Strength (IFS) rating, which is a current opinion on the financial security characteristics of an insurer with respect to its ability to pay under its insurance policies and contracts in accordance with their terms. MARC incorporates assessments of willingness to pay as well as timeliness of payment in assigning the IFS rating to a FGI, consistent with its obligation under its insurance policies and contracts to provide unconditional, irrevocable and timely payment of principal and interest on scheduled debt service of insured securities when the issuer defaults.

MARC's analytical framework for rating a FGI will focus on the same key rating factors that are employed in our (IFS) ratings: franchise strength, insured portfolio characteristics, underwriting and surveillance, reserves and loss reserving, capital adequacy, investments and liquidity, profitability, management and ownership. Beyond insurer specific factors, MARC believes that regulatory restrictions and oversight could exert a significant influence on risk positioning and the insurer's observed business and credit risk profile.

While this paper attempts to provide clarity surrounding our FGI rating methodology and our expectations with respect to each key rating factor, our belief is that the relative significance of a particular rating factor changes over the life cycle of the FGI. Financial support provided by an upstream entity or shareholders would be of greater relevance to the rating of a start-up FGI in its initial years of operation as

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compared to franchise strength which typically requires time to develop.

The FGI's credit strength could also be enhanced by significant government ownership and if it possesses an important public policy role that is unlikely to decline with the passage of time or on account of political transitions. To establish the significance of the foregoing to the FGI's overall credit quality, MARC considers contractual support (as provided in an Act or Ordinance), the structural relationship between the FGI and the government (ownership, golden share, veto power) and finally, the strategic importance of the FGI to the domestic financial system and its effect on systemic stability.

CONCEPT OF FINANCIAL GUARANTEE INSURANCE

Financial guarantee insurance provides investors with guaranteed payment of timely interest and principal when due by an obligor on an insured debt obligation. The insurance guarantee is irrevocable and unconditional, waives all defenses, including fraud, and results in the guarantor stepping into the shoes of the obligor and meeting its obligations in accordance with the original transaction schedule on a timely basis.

The FGI will make the omitted payments to an insurance trustee normally within one business day following notification of non-payment upon receipt of the following in a form reasonably satisfactory to it, of:

- i. evidence of the bondholder's right to receive payment of the principal or interest then due for payment and
- ii. an instrument of assignment that all of the bondholder's rights with respect to payment of such principal or interest that is due for payment shall thereupon vest in the FGI.

The FGI will be subrogated to all bondholders' rights to payment on bonds to the extent of the insurance disbursements made. (The principle of subrogation enables the FGI who has paid a claim to be put in place of the bondholders to pursue recovery of the claim from the obligor by taking over any cause of action available to bondholders against the obligor.)

The business model of present day FGIs is based on underwriting predominantly investment grade debt (municipal, corporate, and structured finance issues), which has been described as a 'no loss' or 'remote loss' concept of underwriting. In this context, financial guarantee insurance is used primarily to improve the investment grade of an underlying obligation. By lending its insurer financial strength or claims paying ability to issuers, the financial guarantee insurer lowers the costs of bond issuance. The bond insurance provides credit and pricing protection and liquidity enhancement for investors.

Given the nature of the FGI's business model, the key driver of a FGI's franchise strength tends to be its insurer financial strength or claims paying ability rating. As a consequence, the FGI has a very strong incentive to work closely with its rating agencies to preserve its rating.

OPERATING ENVIRONMENT AND FRANCHISE STRENGTH

As highlighted by the downgrades of US FGIs in the wake of the global financial crisis (GFC), the franchise value of an FGI rests on its 'AAA' rating. The 'AAA' rating is imperative to the flow of new business and the maintenance of franchise value. MARC's evaluation of an FGI's franchise strength considers its ability to grow its franchise and increase its market penetration over time. The ability of the FGI to execute its growth strategies, meanwhile, will be tied to demand fundamentals for financial guarantee insurance and market conditions.

Our business analysis of a start-up FGI is largely intuitive, and is largely based on the FGI's business model and plan, its value proposition and articulated strategies. MARC views the following as the critical success factors for the financial guarantee business: credit and pricing discipline, capital and risk management, scale and market penetration, the flexibility to adapt to changing market conditions and operational excellence. One of the key challenges for a start-up FGI will be assembling an appropriately staffed management team that possesses the requisite skills and experience.

While the absence of competition will mitigate the risk of pricing pressure, there are other challenges that the start-up FGI has to contend with, notably the disadvantage of operating without the benefit of an established and profitable book of business. Additionally the demand for credit wraps may be concentrated in some classes of securities and certain rating levels (on an uninsured basis), leading to increased positive correlation among the risks in the FGI's insurance portfolio. MARC will look for signs of concentration in the FGI's customer base, and any undue concentrations that might point to adverse selection.

The financial guarantee insurance industry is cyclical with corresponding implications for new business generation. Tight credit spreads, usually observed in a low interest rate environment and a benign credit cycle for instance, tend to impact adversely on demand for credit wraps, and consequently on premium levels and underwriting volumes. MARC believes that even beyond the current scenario of risk averseness among investors and widening of credit spreads, the demand fundamentals for financial guarantee insurance should remain strong.

Both quantitative metrics and qualitative considerations are brought into play in evaluating franchise strength. The quantitative metrics that will be monitored include the absolute size of the insured portfolio and year-on-year growth trends.

UNDERWRITING AND RISK MANAGEMENT

The FGI is exposed to credit risk of its insured portfolio which is in turn a function of the distinctive risk characteristics of the enhanced securities. The credit risk of the insured portfolio clearly has implications for the FGI's capital adequacy and the leveragability of the business.

Lower risk exposures can be leveraged to a greater degree than a higher risk exposure, as the concept of risk based capital adequacy framework suggests. The underlying rating distribution of the FGI's book of business is taken into consideration in MARC's assessment of the FGI's overall risk appetite and underwriting discipline.

Our views on the key credit characteristics of the principal classes of securities that are commonly insured by FGIs are set out below:

1. Public finance/government obligations

The regular issuers in the US public finance sector have included state obligors, municipalities and state agencies while the issued debt has typically been in the form of general obligation bonds (GO) backed by the tax raising ability of the local government or revenue bonds where debt service is funded by cashflows of a specific project such as a toll road, sewage plant, hospital, etc. The average life of such debt usually extends beyond 15 years, typically between 20 to 30 years, but there is a low risk of default. The FGI rarely has to pay bond interest payments on insured municipal bond, and typically only for brief periods of time because municipalities rarely default and almost never repudiate their debts. Also, the premium for municipal bond insurance is also generally collected upfront, allowing a sizeable unearned premium reserve (UPR) to be established upon issuance. The UPR is recognized as hard capital for rating agency capital adequacy modelling purposes.

In our domestic setting, the class of securities that possess the most similar credit characteristics to the US public finance transactions would be issuances by government-related issuers (GRIs). Potential issuers could include state agencies and GRIs rated in the single-A rating band. Public finance type underwriting exposures are viewed as being one of the most supportive of 'remote loss' underwriting classes of securities. Interestingly, MARC notes that government obligations are listed among the guaranteed obligations provided for in the Insurance (Financial Guarantee Insurance) Regulations 2001. It is defined as 'an obligation that is payable or guaranteed by a government body or that is payable from tax revenues, rates, charges or appropriation imposed or collected by such a government body'.

2. Structured finance

The experience of FGIs in the US is instructive on the risk of providing wraps for structured credit. The default and downgrade experience of different asset classes varies generally but in the US, the most problematic structured credit exposures for the FGIs have been that of non-prime and second-lien residential mortgage-backed securities (RMBS) and collateralised debt obligations (CDOs). In particular, the second liens had exhibited a "binary" pattern of losses in the GFC: either a loan continues to perform, or the borrower defaults and the lender realises zero recoveries.

In the US, insurance written against asset-backed securities (ABS), MBS and CDOs requires the insurer to make payment to bondholders as interest or principal shortfalls occur. A principal shortfall, we gather, would include any write-down, not just when the principal is legally due. This differs from a classic credit default swap (CDS) contract, where the seller of protection (in essence, the insurer) buys the defaulted security at par. FGIs account for these policies as derivatives under GAAP guidelines, which require the exposures to be marked to market. The FGI incurs significant write downs, because the CDS contracts will rise in value, compelling the insurer to mark-to-market their short CDS position. The cashflow and liquidity implications would be more benign compared to the accounting impact as the FGIs' exposure is mostly confined to the senior tranches in the transaction structure. In addition, like any CDS, the insurance premium is collected over time as well rather than upfront in the case of municipal bond insurance policies.

Based on the stress experienced by the US structured sector during the GFC, it is apparent that a FGI that underwrites structured credits would need to be well acquainted with and give careful consideration to indenture provisions, in particular what constitutes principal shortfalls, the accounting treatment for such exposures, and prescribed guidelines and limits for exposures to avoid sector stress. Historically, the underlying collateral pool for domestic CDOs or collateralised loan obligations (CLOs) have comprised solely of non-amortising unsecured loans with limited obligor diversification. These CLOs, all of which were static, had experienced higher defaults than corporate bonds due to aggressive structuring and weaknesses in the underlying bank loan collateral. In the absence of significant improvements in the area of structural protections, leverage and the quality of the underlying collateral, remote loss underwriting could be challenging especially for mezzanine and junior tranches. Recovery of defaulted obligor loans during the tenure of the transaction has been generally poor.

On the other hand, domestic RMBS, auto-hire purchase ABS and single-A rated unsecured (public sector employee) consumer loan backed issuances have performed well. Existing real-estate and plantation ABS deals in the market have also performed satisfactorily although current commodity price risk exposure is putting pressure on lessee debt service

capacity. The real estate backed transactions are by nature less risky because of their stable yields and occupancy levels.

Structured transactions in our domestic market also include bonds backed by either existing or future receivables from a creditworthy obligor or a number of obligors. These structures are designed to permit debt to be issued at a higher rating level than the originator. Obligations backed by future receivables entail in exposure to performance risk of the originator rather than a direct credit risk. A single-A rating level structured transaction of this nature normally carries lower risk of downward rating migration as compared to a similarly rated corporate debt exposure.

3. Infrastructure obligations

Like government obligations, infrastructure obligations are also listed among the guaranteed obligations provided for in the FGI regulations and are defined as 'obligations created to finance the construction, development, maintenance, improvement or expansion of physical infrastructure'. Examples given were power production, telecommunication, roads, bridges, tunnels, waste disposal and resource recovery facilities, pollution control facilities, airports, schools and hospitals.

Project bonds are typically structured to be non-recourse or limited recourse to a corporate sponsor. A variety of risks relate to the underwriting of such debt, ranging from offtaker risk, construction and completion risk, raw material supply risks to operation and maintenance risks.

4. Credit default swaps

The experience of US financial guarantee issuers with CDS exposures highlights that this line of business can be a risky proposition. While the bulk of the US financial guarantee insurance industry's insured risk is executed via financial guarantee insurance policies, a noteworthy portion of in force par is comprised of credit default swap (CDS) issued by the FGIs as protection seller on structured finance bonds. An important feature of CDS transactions that distinguishes credit default swaps from a financial guaranty policy is that the seller of protection is required to buy the defaulted security at par after notice of a credit event. This feature subjects the FGI to a higher level of liquidity risk than a traditional financial guarantee insurance policy, which requires the insurer to make debt service payments only when due. It is noted that certain FGIs have sought to mitigate these risks by negotiating the right to pay scheduled principal and interest over the life of the insured obligation.

5. Private sector corporate bonds

Apart from municipal single risk exposures, the private sector corporate debt exposures in the insured portfolios of US FGIs have been predominantly that of pooled corporate loans/debt in the form of CLOs/CDOs. Issues to be considered here would be single name risk concentration with the corporate segment of the insured portfolio, as well as industry concentration risk. This segment is typically demanding on surveillance resources particularly as the migration in credit quality for lower investment grade (stand-alone) corporate debt, i.e. BBB to single-A rated debt can be quite pronounced. Downward rating migration has to be closely monitored to facilitate remediation initiatives, sound loss reserving and capital adequacy monitoring.

UNDERWRITING AND SURVEILLANCE

MARC's approach to assessing the risk of the insured portfolio calls for shadow ratings to be assigned to all the transactions comprising the underlying insured portfolio in addition to regular discussions with senior underwriting personnel of the FGI to gain an understanding of the insurer's underwriting criteria and any changes therein. We would expect the FGI to have a good internal rating systems infrastructure and appropriate risk limits to be established to instill underwriting discipline. The limits should compare the insured net or gross par outstanding or average annual debt service, as applicable, for a single risk by relevant segment (public finance, structured finance or private sector corporates) to the FGI's qualified statutory capital. MARC expects the insured portfolio to be adequately diversified with regard to single name risk, transaction type and sector. Portfolio simulations (which take into account the distribution of the insured portfolio across sectors, rating categories and tenures) will be relied upon to generate stress case losses which will then be compared to the net or gross par outstanding, as appropriate for the circumstances, and capital.

MARC will also undertake a review of the FGI's surveillance activities, consistent with our view that surveillance is critical to risk management. In general, MARC views the separation of surveillance from underwriting as prudent as it would facilitate objective and independent reviews, increasing the likelihood that deteriorating credits will be detected in a timely manner. This would also ensure that surveillance is not neglected during periods of high volume underwriting activity. The surveillance function should monitor the ongoing performance of each credit with the level of transaction oversight determined by the likelihood for credit impairment. Surveillance for private sector corporates should be more frequent than government-related credits for instance, as these transactions would be more susceptible to rapid credit deterioration. MARC expects insured transactions to be structured in a manner that permits proactive remediation measures to be taken to mitigate deterioration in the issuer's credit quality.

Apart from analysing the risk of the insured portfolio, MARC will also consider pricing trends in its assessment of underwriting risk. Where pricing concerned, it is understood that the pricing of financial guarantee insurance products are not actuarially derived but based on capturing the majority of the available spread between the yield the issuer must pay with and without the credit wrap. As a general rule, FGIs target roughly two thirds of the available spread as the required insurance premium. Overall, MARC expects the FGI to exhibit sound risk-adjusted pricing.

RESERVES AND LOSS RESERVING PHILOSOPHY

Continuous monitoring by the FGI's surveillance function of the risk of loss on all deals and the placing of transactions on watch lists after subsequent credit migration to BB+ or lower would normally be followed by some form of remediation activity. This marks the inflection point, a point from which the expected loss outcome ceases to be determined by independent events and the influence of negotiations and workouts in the avoidance of losses assumes significance. Ongoing surveillance of internal or external rating migrations within the insured portfolio should facilitate the determination of possible claims in advance of defaults.

Prudent loss reserving practice calls for the establishment of general or non-specific reserves which would mirror the composition of the FGI's insured portfolio and composite industry loss experience for such exposures. The FGI insurance regulations require the FGI to provide for outstanding claims and to maintain reserves for unexpired risks. In addition, the FGI is required to establish and maintain contingency reserves, contributions to which are intended to reflect the risk of the particular category of guarantees. The six categories, ranked in terms of risk from lowest to highest, are: investment grade government obligations, non-investment grade government obligations, investment grade infrastructure obligations, non-investment grade infrastructure obligations, any investment grade obligation that is other than a government or infrastructure obligation and lastly, any non-investment grade obligation that is other than a government or infrastructure obligation. The required contributions are substantially similar to that laid out in the financial guarantee regulations promulgated by New York State. Maintenance of the statutory contingency reserves will allow positive reserve margin to be built up in a benign credit environment.

As and when a bond goes into default, we would expect appropriate case reserves to be established based on current information. Uncertain correlations within the in-force risk portfolio suggest that it would be more prudent when establishing the expected losses to book at higher relative confidence levels.

Clearly, higher rated credits at inception are less likely to require loss payments than those starting at lower ratings. Loss frequency and severity characteristics would vary widely by sector (public finance, structured finance, private sector corporates) and can be gauged

based on studies of historic bond defaults in our domestic market. Based on observed debt behaviour, private sector corporate debt and certain classes of structured finance are more likely to witness defaults relative to the government-related debt.

MARC believes that reasonable estimates of the loss emergence pattern for the various exposures can be derived from rating agency data. The estimation of recoveries in the event of default, which are a function of the assets of the defaulted issuer, the seniority of the claim and the relative strength of negotiating positions, would however be more challenging.

MARC would consider the extent to which the FGI proactively establishes reserves in response for known and latent exposures, the conservatism exercised in establishing the reserves, as well as the infrastructure and databases maintained to support loss reserving decisions.

CAPITAL ADEQUACY

MARC believes that a risk-based measurement approach to capital adequacy is superior to non risk based measures such as the hard capital ratio (effective net par outstanding divided by hard capital) to assess the true economic capital buffers of the FGI. The approach that will be taken by MARC to assess the FGI's capital adequacy will be to undertake a static analysis of its existing portfolio under a set of stress scenarios. This approach will produce expected claims arising from the portfolio under stress scenarios while assuming that no new business is written (i.e. state of runoff). Given the differences in the loss development patterns of the exposures and loss severity by sector (public finance, structured finance, etc), segmentation of the insured portfolio for the purposes of static analysis will be designed to be as granular as possible. The capital model will draw on MARC's credit migration and default probability statistics, supplemented by external data on recoveries where possible. The expected loss of the portfolio and runoff expenses under 'stressful' economic conditions will then be compared with available financial resources as represented by statutory capital reserves and/or shareholder equity, loss reserves, unearned premium reserves, contingency reserves and contingent capital (capital commitments that have yet to be paid in) as well as reinsurance. The capital coverage ratio generated, expressed as a percentage of claims-paying resources to losses, would be compared to the established thresholds for given rating levels. The minimum ratio for a 'AAA' rated FGI would be within the range of 125% to 150%, and 100% to $\leq 125\%$ for a 'AA' rated FGI. A capital coverage ratio of 125% indicates that claims paying resources exceed simulated losses by 25%.

Exhibit 1: MARC's Capital Adequacy Matrix

Rating Level	Minimum range for Capital Coverage Ratio (%)
AAA	125% to 150%
AA	100% to ≤125

It is noted that soft capital facilities in the form of reinsurance-like lines are also considered by the global rating agencies in their assessment of capital adequacy. Soft capital facilities employed by the US-based FGIs currently assume the form of standby credit lines of limited recourse nature, repayment of which is funded only from recoveries and installment premiums of defaulted bonds. As and when such forms of capital become available to the domestic FGI, we will update our capital model.

MARC will monitor the reliance placed on reinsurance and other capital substitutes, if applicable, to provide additional capital.

INVESTMENTS AND LIQUIDITY

FGIs are expected to operate very conservative investment portfolios which reflect an asset allocation strategy that is geared towards capital preservation and the maintenance of investment quality. MARC expects very little credit risk to be taken by a AAA-rated FGI, with high investment grade (AA and above) and/or government bonds, and money market investments accounting for close to 100% of the FGI's invested assets.

MARC will evaluate the FGI's liquidity sources: cashflow from written premiums, its investment portfolio, cash, as well as reinsurance arrangements with third-party reinsurers and lines of credit with banks if applicable relative to liquidity uses. Although regular premium income provides a ready source of liquidity, large claim payments may necessitate additional funding sources such as parental support or ready access to the capital markets. MARC simulates defaults of credits placed on caution lists and watch lists to obtain estimate potential liquidity demands under normal conditions, as well as stress. Liquidity uses include cash payments due to default on insured debt, operating expenses, debt service requirements should the FGI incur debt, and possibly dividends. MARC will monitor trends in cashflow from operations, free cashflow as well as the overall liquidity of the FGI's investment portfolio.

For liquidity management to be assessed as strong, MARC would expect projected cash flows of the FGIC to be closely monitored and stressed via modelling to ensure that cash flows are sufficient to service liability needs. MARC would expect guidelines to be establishment with regard to its investment portfolio and asset liability mismatches to be addressed by way of appropriate risk mitigants, for example, external liquidity support.

PROFITABILITY

In assessing an insurer's profitability, MARC's focus is on its ability to generate consistent profits, the diversification of earnings, as well as the level, trend, and stability of the profits. When earnings quality is good, the insurer has sufficient profits to support operations, provide for growth, and build capital. On the other hand, when earnings quality is poor, growth will be constrained and the insurer's capital base may suffer erosion. The FGI's operating performance depends upon a host of factors that are external and internal to the insurer. Among external factors that could affect earnings performance are credit market conditions, regulatory changes while from an internal perspective, its earnings quality depends heavily upon its franchise strength and strategy and operating efficiency.

The demand for financial guarantee insurance and pricing adequacy on a risk adjusted basis will be the key driver of the FGI's profitability. The primary quantitative metrics that MARC uses to assess profitability would be the FGI's three year average of annual return on equity (ROE), its three year average of loss and loss adjustment expenses divided by net premiums earned (loss ratio) and its three year average of underwriting expenses divided by net premiums written (expense ratio). Underwriting losses provide an indication of the quality of the FGI's underwriting model, as well as management's ability to manage portfolio risk. The FGI's loss ratio, meanwhile, provides a measure of the FGI's efficiency. A FGI that has been in business for some time will have a significant proportion of its income locked in at the start of the financial year, stemming from insurance premium from past business and investment income. Little emphasis is placed on investment returns as MARC expects the investment portfolio to be invested very conservatively to preserve a strong liquidity position. Finally, the ROE captures both profitability and efficient deployment of shareholder capital.

MANAGEMENT AND OWNERSHIP

In assessing management, MARC considers the following as key considerations: the FGI's strategic goals and positioning, its overall risk appetite, controls and planning, management depth and succession planning as well as corporate governance. MARC holds the view that the FGI's ownership factor is very important for a start-up FGI. Aggressive leverage at the holding company and a financially weak parent are viewed negatively from a rating perspective while financially strong shareholders are looked upon favourably.

In the case of a government-sponsored FGI, MARC would expect to assign a final rating that would incorporate some degree of rating uplift from its stand alone creditworthiness. The degree of uplift, which reflects expected government support in case of need, would depend on the strength of the ties between the government and the FGI, the extent to which the FGI performs a public policy role and the significance of this role.

RATING SYMBOLS & DEFINITIONS INSURER FINANCIAL STRENGTH RATINGS

SECURE RANGE

- AAA** An institution rated AAA has an exceptionally strong capacity to meet its financial commitments and exhibits a high degree of resilience to adverse developments in the economy, and in business and other external conditions. These institutions typically possess a strong balance sheet and superior earnings record.
- AA** Insurance companies rated AA possess a very strong ability to meet their policyholder obligations. Their overall risk profile, while low, is not quite as favourable as for insurance companies in the highest rating category.
- A** Insurance companies rated A possess strong ability to meet their policyholder obligations but are somewhat more susceptible to adverse changes in economic and underwriting conditions than companies in higher-rated categories.
- BBB** Insurance companies rated BBB possess an adequate ability to meet their policyholder obligations. However, adverse changes in economic and underwriting conditions over time could affect their claims-paying ability.

VULNERABLE RANGE

- BB** Insurance companies rated BB exhibit some weaknesses in their operating profile and/or financial condition. Currently able to meet their policyholder obligations, but claims-paying ability is regarded as marginal and cannot be assured over a long period of time. Such companies are vulnerable to adverse changes in economic and underwriting conditions.
- B** Insurance companies rated B exhibit fundamental weaknesses in their operating profile and/or financial condition. Currently able to meet their policyholder obligations, but claims-paying ability is regarded as weak. Such companies have limited capacity to withstand adverse changes in economic and underwriting conditions.
- C** Insurance companies rated C possess a very weak ability to meet their policyholder obligations. The continued capacity of these companies to meet their policyholder obligations is poor and highly dependent on favourable economic and underwriting conditions.
- D** Insurance companies rated D possess an inadequate ability to meet their policyholder obligations. Such companies require periodic external support or regulatory intervention, without which their continued viability is in doubt. The rating indicates that a default may have already occurred, or there is a high likelihood of default on their policyholder obligations.

Note: Ratings from AA to B may be modified by a plus (+) or minus (-) suffix to show its relative standing within the major rating categories.

RATING OUTLOOK

MARC's Rating Outlook assesses the potential direction of the entity's rating over the intermediate term (typically over a one- to two-year period). The Rating Outlook may either be:

- POSITIVE** which indicates that a rating may be raised;
NEGATIVE which indicates that a rating may be lowered;
STABLE which indicates that a rating is likely to remain unchanged; or
DEVELOPING which indicates that a rating may be raised, lowered or remain unchanged.

MARC has refined its methodology for Financial Guarantee Insurer (FGI) rating approach. This methodology supersedes MARC's "Rating Approach to Financial Guarantee Insurer" published in 2009.

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