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Structured Debt of Mexican Municipalities

Addendum to the Federal-Transfers Backed Debt Methodology

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This methodology is the exclusive property of HR Ratings and will be applicable after going through its regulatory processes.

This addendum describes the process followed by HR Ratings to evaluate the credit quality of the Structured Debt of Mexican Municipalities.

This Addendum of Methodology outlines the process used in the evaluation of the credit quality of the debt of the municipalities of the United Mexican States acquired through irrevocable trusts (in the form of Structured Debt, SD) and which have Federal Participations and Contributions as a payment source. The credit risk evaluation model maintains the assumptions put forward in the Master Methodology: *Federal Transfers Backed Debt Methodology (States).*

Description of the Master Methodology

The model described in the Master Methodology is based mainly on a quantitative exercise that measures, in a specific period, the maximum reduction resisted by revenue allocated to the SD under the condition of meeting all its payment obligations. This reduction determines the credit rating, although under specific circumstances, the rating may vary in terms of notches due to Qualitative Adjustments.

With the projection of the pledged revenue, considering HR Ratings' Macroeconomic Scenarios and the debt service in each period, the model identifies the minimum coverage and based on this applies an additional stress to the transfers over a period of thirteen months. The Target Stress Rate (*TSR*) measures the maximum reduction that the structure will withstand in said period. The model also considers the use of all the funds available in the trust but establishes the condition that the funds used shall be replenished with the funds remaining from the later operation.

The methodology describes the use of the Prompt Payment Guarantee, financial hedging instruments and secondary and/or substitute sources of payment.

Description of this Methodology Addendum

This addendum uses the model described in the Master Methodology to calculate the *TSR* and assign the credit rating. It also incorporates additional Qualitative Adjustments, such as the unsecured rating of another sub-national entity and adjustments in the event that the reserve fund does not cover a minimum of two months' debt service to cope with operative contingencies of the states on transferring Federal funds to the municipalities.

The current Fiscal Coordination Law establishes the minimum amount that each state must transfer to its municipalities via certain funds that compose *Ramo* 28 and *Ramo* 33. In its different scenarios, HR Ratings projects the amount applicable to each municipality considering the amount projected for each state in accordance with the process described in the Master Methodology.

This addendum incorporates the analysis process of Global Credit Lines, which refer to an SD that promotes access to and the contracting of bank loans in competitive financial conditions for a set of municipalities. There are different requirements that may be set by the states or any Federal authority for municipalities seeking to adhere to the line.

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Structured Debt of Mexican Municipalities

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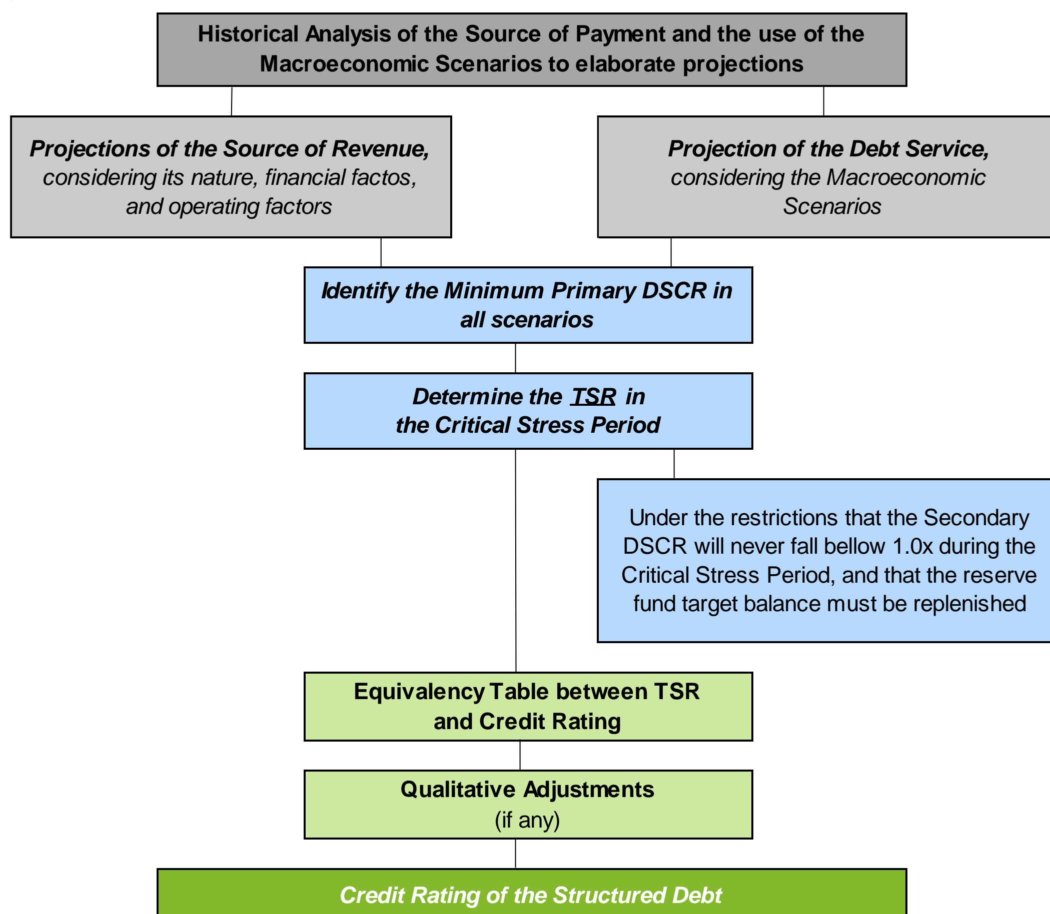
Introduction

This addendum to the *Federal Transfers Backed Debt Methodology (States)* (Master Methodology) outlines the process used in the evaluation of the credit quality of the debt of the Mexican Municipalities contracted through irrevocable trusts (as Structured Debt, SD) and that have the respective Participations and certain funds of the Federal Contributions as a payment source.[1] The amount available from these funds is determined to a great extent by the dynamic of the General Participations Fund (FGP), which is distributed through *Ramo* 28, certain funds that compose *Ramo* 33 and any other source of Federal Transfers that may be allocated as a payment source for same .

The addendum describes the elements taken from the Master Methodology and certain aspects that are unique. For example, the addendum maintains the assumption of the requirement for the payment of interest and periodic amortizations. The general structure of the rating model is similar, as can be observed in Figure 1 below:

Figure 1: HR Ratings' Evaluation Process



Source: HR Ratings

[1] The Master Methodology: *Federal Transfers Backed Debt Methodology (States)*, as well as the addendum applicable to the structured debt with own revenues of the Federal entities (states), can be found at the following link: https://www.hrratings.com/methodology/.

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HR Ratings must have the relevant legal documentation to carry out this evaluation. Furthermore, it must review that the structure is set up and functions properly through a legal review in accordance with its General Methodological Criteria.

The most important differences from the Master Methodology in terms of quantitative modeling refer to: (i) the additional stress levels derived from the transfers made by the state to the municipality in question, and (ii) the rating of the municipal entity whose Federal transfers is allocated.

Moreover, the factors that cannot be incorporated quantitatively into the analysis will be considered through Qualitative Adjustments in terms of *notches.* Some of these are already detailed in the Master Methodology. But others, such as the possible impact on the credit quality of the state to which the municipality or reserve requirement belongs, relate exclusively to this addendum.

Transfers to Municipalities

The current Fiscal Coordination Law (LCF) establishes the minimum percentage that each state must transfer to its municipalities via certain funds that compose *Ramo* 28. However, there is no proportion established on the total of Federal state participations.

The Federal Participations received by the municipalities from the entire state FGP may not be less than 20.0% of the amount applicable to the state. The state legislatures will establish their distribution among the municipalities based mainly on the collection incentives and replenishment principles. 100% is applicable to the municipalities in the case of the Municipal Development Fund (FFM).

Among the funds that compose *Ramo* 33, the Social Infrastructure Contributions Fund (FAIS) is set annually in the Federal Disbursements Budget (PEF) in an amount equivalent to 2.5294% of the Federal Assignable Collections (RFP), based on the estimates made based on the Federal Revenue Law (LIF) for each fiscal year. Of the total of the RFP, 0.3066% will apply to the States' Social Infrastructure Fund (FISE) and 2.2228% to the Municipal Social Infrastructure Fund of the Territorial Demarcations of the Federal District (FISM). This fund will be paid monthly in the first ten months of the year in equal parts to the states by the Federation and then by the states to the municipalities and territorial demarcations.

Global Line of Credit

The Global Line of Credit (LGC or program) is a structure that promotes access to and the contracting of bank loans in competitive financial conditions for a set of municipalities within a state [2]. The primary payment source of loans contracted under an LGC will be Federal participations and/or contributions (FGP, FFM, FAIS), which are assigned to a master management and payment source trust by the municipalities that opt to adhere to the program[3]. Municipalities that contract a loan through this mechanism must sign an adhesion contract that constitutes them as Trustors Adhered to the Trust. In certain cases, an LGC may or may not be guaranteed by the respective State government.

[2] LGCs may be established by the Federation through BANOBRAS or through a state itself.
[3] SDs whose payment source comes from own revenue, as detailed in the addendum, may also be considered: "*Federal Transfers Backed Debt Methodology (States)*", at: www.hrratings.com/methodology/.

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HR Ratings may rate an LGC or the program, if required, and may also rate each financing independently. The global financial terms and conditions will be considered to analyze the program, including the analysis of future flows of the payment source. Depending on the nature of the payment source, the projection method will follow the stipulations set out in the Master Methodology, in this document or in the respective own-revenue addendum. Additionally, each of the requirements (legal and operatives) to be met by the municipal financing that adhere to the program will be analyzed.

In most cases, the legal documents of the LGC establish the capacity characteristics, maximum contracting amounts, terms, amortization profiles, interest rates, surcharges, target amount of the reserve fund, affirmative and negative covenants, among others, that must be met by all the financing arrangements. Under these circumstances, the financial and credit analysis of the program will consider these general characteristics, will conduct the same analysis process in a cyclical and critical scenario, as specified in the respective methodology and obtain a *TSR*.

In the event that there is the possibility that the municipalities contract financing adhered the program with different financial characteristics, HR Ratings will analyze all the possible cases and as a consequence, the rating of the program will be based on the case that produces the lowest *TSR*. It is important to point out that the rating of the program may consider positive or negative qualitative adjustments, as with any SD analyzed.

In terms of the possibility that each municipal financing has different characteristics, HR Ratings may rate both the program and each one individually. In this vein, a restriction may be applied to the amount of credit available to each municipality based on the maximum percentage in relation to the payment source. For example, a municipality may be restricted to maintain the amount to be contracted below 35% of the pledged transfers authorized at the time of requesting the loan.

There are also different requirements or restrictions that may be set by the states or any Federal public entity for municipalities seeking to adhere to the program. In the case of *Ramo* 33, these restrictions are subject to that the funds of the contracting year be sufficient to cover the debt. In the case of *Ramo* 28, the factors to be evaluated refer to how the minimum coverage and other factors such are the existence of a technical committee, solidarity or not among the borrowers, etc., are determined.

Quantitative Analysis Process

Preparation of the Assumptions in Base and Stress Scenarios

The procedures stipulated in the Master Methodology are inherited in the determination of the flow of revenue allocated and the debt service. These consider the following variables: 1) the rate of inflation, 2) the Gross Domestic Product (GDP), 3) interest rates, 4) the national FGP as a percentage of the RFP and 5) the percentage of the national FGP received by the state to which the municipality whose SD is evaluated belongs. Implicitly, each scenario assumes nominal levels for the GDP and actual interest rates. Each variable includes its respective stress levels (macroeconomic and cyclical) incorporated in accordance with the terms put forward in the Master Methodology.

The Master Methodology explains how the flow of the RFP is distributed among the different *Ramos* and their funds. The addendum mentions those that are relevant to the case of the municipalities.

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HR Ratings prepares projections of the percentage relating to the State FGP and the National FGP. For the analysis presented in this addendum, projections are prepared in terms of the percentage of the State FGP that apply to the municipalities of each entity and within this distributable percentage, the percentage that applies to each municipality.

The Municipal Development Fund (FFM) is also projected through the percentage assigned to each RFP fund[4]. Lastly, the FAIS revenue is projected through the percentage assigned annually in the PEF.

Mexican Federal legislation allows a state to allocate up to 25% of the revenue to which it is entitled annually to a SD (applicable both to the Contributions Fund for the Strengthening of Federal States (FAFEF) and to the FAIS). Taking the foregoing into account, this rule stipulates that, for future years, the municipality may allocate a minimum amount equal to 25% of the revenue allocated to it in the contracting year. Therefore, if the total amount of the funds received by the municipality through the FAIS program in a future year (for example,t_1) is lower than the total amount received in the contracting year (t_0), the structure will receive an amount of funds at least equal to 25% of the contracting year.

Stress Scenario

There are two additional assumptions of stress for municipal structures, as well as the stress at state level detailed in the Master Methodology.

The first consists of the assumption that of the participations allocated, that each state distributes to its municipalities is reduced in comparison with the percentage obtained in the Base Scenario. It is generally taken as a preliminary assumption that the state distributes 20% of the participations received among its municipalities. The percentage is subject to conditions of stress in the preparation of the projections of the Federal Transfers distributed among the municipalities.

The second assumption refers to the case in which the percentage allocated to the municipality is reduced in comparison with the percentage allocated in the Base Scenario. This scenario reflects the risk of a situation in which the revenue from state-level participations does not change, but revenue lower than expected is received at municipal level.

If the structure depends on transfers allocated through the FAIS, it shall the stressed based on the percentage allocated in the PEF.

Determination of the Target Stress Rate (*TSR*)

The Debt Service Coverage Ratio (DSCR) is obtained once the pledged revenues and the debt service are determined. The analysis of this items is conducted based on the Master Methodology.

[4] Currently the PEF, based on the Fiscal Coordination Law in force, establishes the amount 1% of the RFP as transfers allocated to the National FFM.

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The analysis process is conducted throughout the period in which there is an outstanding balance of the debt acquired pending payment[5]. However, in order to incorporate the sensitivity of creditor faced with the weakness of a structure in coming periods, subject to certain conditions, the timeline in which the payment period will sought with the minimum Primary DSCR may be reduced. This timeline is extended over the next two macroeconomic cycles according to the scenarios generated by HR Ratings. However, the analysis will extend to the entire term of the SD under the conditions established in the Master Methodology.

The *TSR* is calculated using the optimization process, which, has the *TSR* as a variable "target". The full payment of the respective debt service is a restriction, which would be reflected in a Secondary Coverage (those that include the reserves) equal to or greater than 1.0x. The second condition is this process is that the reserve fund is replenished to its target balance within a set period after its use. The macroeconomic variables that will be use in this process will be those used in the Stress Scenario that reflects the most adverse conditions for the SD.

The *TSR* represents the maximum-possible stress that the payment source allocated, in favor of the SD, may withstand without falling into default and allowing the replenishment of the reserve. However, there are cases of SDs in certain municipalities that do not contemplate a reserve fund. In these cases, the metrics of the Primary and Secondary Coverages will be matched and stressed until the lower of their values reach the unit in the Critical Stress Period.

The equilibrium *TSR* (TSR^E) allows, through an assignment curve, the Credit Rating of the SD to be determined. This curve is shown in Figure 2:

[5] In terms of the determination of the outstanding balance of the SD, HR Ratings shall confirm with the borrower if the amount contracted was the same as that actually drawn-down. If this information is not available, for the purposes of model, a draw-down of 100.0% of the amount contracted will be assumed. If the amount drawn-down is confirmed as being less that the amount contracted, future draw-downs must be monitored in case that the draw-down period is still valid.

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Figure 2: Ratings to TOE

Credit Rating	TSR Ranges
HR AAA (E)	[85.0% , 100%]
HR AA+ (E)	[78.0% , 85.0%)
HR AA (E)	[71.0% , 78.0%)
HR AA- (E)	[64.0% , 71.0%)
HR A+ (E)	[56.4% , 64.0%)
HR A (E)	[48.8% , 56.4%)
HR A- (E)	[41.2% , 48.8%)
HR BBB+ (E)	[33.6% , 41.2%)
HR BBB (E)	[26.0% , 33.6%)
HR BBB- (E)	[18.4% , 26.0%)
HR BB+ (E)	[16.0% , 18.4%)
HR BB (E)	[14.0% , 16.0%)
HR BB- (E)	[12.0% , 14.0%)
HR B+ (E)	[10.0% , 12.0%)
HR B (E)	[8.0% , 10.0%)
HR B- (E)	[6.0% , 8.0%)
HR C+ (E)	[4.0% , 6.0%)
HR C (E)	[2.0% , 4.0%)
HR C- (E)	[0.0% , 2.0%)

Source: HR Ratings

This figure shows the intervals or ranges within the curve on a scale of 0% to 100%, with which HR Ratings will determine the credit rating based on the value of the *TSR*. However, if in an annual review or during the follow-up process, it is identified that the *TSR* has changed to another rating range as a result of the analysis conducted, HR Ratings may maintain the rating or modify its attribute by considering the evolution expected of the *TSR*.

Credit Rating and Qualitative Adjustments

There are relevant factors that cannot be incorporated quantitatively into the analysis; therefore, they are considered as Qualitative Adjustments within the process. These factors are atypical and there are specific guidelines for them to be considered in the credit rating of the SD. The analysis of the conditions to be met to consider these factors and the impact that they may have on the rating of as SD is explained in detail in the Master Methodology.

Adjustments Related to the Entity's Unsecured Rating

Typically, the Qualitative Adjustments consider the unsecured rating of the state and the possibility that the state contributes funds directly to the trust.

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This factor can be analyzed in three different ways. The first refers to the fact that the unsecured rating of a contracting entity is below “HR BBB-”[6]. The second refers to the possibility that the SD contemplates, either implicitly or explicitly, the funds of a second sub-national entity. And the third refers to that the entity's rating shows a high credit quality, thus offering certainty regarding the timely payment of its debt obligations. This point is described in greater detail in the Master Methodology.

Under certain conditions, the credit rating of the state may be relevant. If this entity offers a guarantee to the SD, it must be evaluated to establish if it a secondary or substitute source in order to determine if it may imply an impact on the quantitative model. In these cases, in order not to assign an unfavorable adjustment, the state's rating must be greater than or equal to “HR BBB-” if the guarantee is constituted by Federal transfers and “HR BBB” if the guarantee is constituted by own revenue.

Adjustments Related to Affirmative and Negative Covenants

If for any reason the legal documentation of the SD links the credit risk of the structure to any unrelated risk, HR Ratings shall evaluate the potential impact on the credit quality of the SD. This type of risks, typically, are described in the Affirmative and Negative Covenants Clause (“Covenants”) and that, on being signed by the parties involved, have been committed to be performed. This point is described in greater detail in the Master Methodology.

Adjustment related to the Reserve Fund

Given that the distribution and transfer of the Federal funds depends generally on the state, there is the possibility that the SD will be exposed to operative risks. Therefore, the absence of a reserve equivalent to at least two months’ debt service is the cause for an Qualitative Adjustment (one *notch*) on the rating of the SD. This obeys that the use of the resources held in a reserve fund are not exposed to said operative risks.

[6] The rating level established in this section refers to an SD the debt of which is backed by Federal Transfers.

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