# DSCR

## Context

We need to calculate the Debt Servicing Coverage Ratio for both B2B and B2C customers after they have passed the KDF check.

## Acceptance criteria:

| AC | Description | Ticket |
|---|---|---|
| 1.0 | **Calculate DSCR for Private customers**<br>1. The privateMinDSCR parameter must be allowed to be configurable by country, leasing company, and customer segment<br>2. The service must calculate the DSCR of the customer and the maximum installment they can afford:<br>a. netDisposableIncome = IF( `personalIncome_primaryIncome_thirteenthMonthsPay` = true, `personalIncome_primaryIncome_netHousehold` *13/12, `personalIncome_primaryIncome_netHousehold` ) + ( `personalIncome_chfPerYear_chfPerYear` /12) - `expenditure` - `supplements` - `otherExpensesExistingContracts` + `personalExpenses_otherInfo_chfPerMonth`<br>b. monthlyInstallment = Monthly gross leasing installment<br>c. privateMinDSCR = 2.0<br>d. **customerDSCR** = (netDisposableIncome / monthlyInstallment) - 1 | LD-18: [CH]: DSCR feature DONE |

| | | |
|---|---|---|
| | e. **maxInstallment** = netDisposableIncome / (1 + privateMinDSCR)<br>3. The service must return whether or not the customer passed the DSCR check | |
| 2.0 | **Calculate DSCR for Business customers**<br>1. The businessMinDSCR parameter must be allowed to be configurable by country, leasing company, and customer segment<br>2. The service must calculate the DSCR of the customer and the maximum installment they can afford:<br>a. netDisposableIncome = ( `businessFigures_financialRatios_currentYearEBITDA` /12) - `businessFigures_existingLeasingCreditAgreements_monthlyContribution` + `businessFigures_requestReplaceExistingContract_monthlyContribution`<br>b. monthlyInstallment = Monthly gross leasing installment<br>c. businessMinDSCR = 3.0<br>d. **customerDSCR** = (netDisposableIncome / monthlyInstallment) - 1<br>e. **maxInstallment** = netDisposableIncome / (1 + businessMinDSCR)<br>3. The service must return whether or not the customer passed the DSCR check | LD-18: [CH]: DSCR feature DONE |
| 3.0 | **Return max installment and down payment required to reach minDSCR**<br>1. When the customer fails the DSCR check, the service must return the following additional parameters:<br>a. maxInstallment<br>i. See AC 1.0 and 2.0<br>b. requiredDownPayment<br>i. financedAmountAffordable = -PV(interestRate/12, term, maxInstallment, residualValue, 1) | LD-18: [CH]: DSCR feature DONE |

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|---|---|---|
| | ii. requiredDownPayment = purchasePrice - financedAmountAffordable | |
| 3.1 | **Check that down payment is within allowed range**<br>1. When the customer fails the DSCR and the service calculates the requiredDownPayment, then the service must check that requiredDownPayment is within the allowed down payment range<br>2. When the requiredDownPayment is outside of the allowed range, then the service must return a response that the requiredDownPayment is outside of range and the customer cant afford the lease | ☑ LD-855: Add validation to requiredDownPayment in DSCR endpoint DONE |

**KDF mapping:**

| | KDF value | Country | Definition |
|---|---|---|---|
| 1 | `personalIncome_primaryIncome_thirteenthMonthsPay` | CH | true if customer has 13th month pay |
| 2 | `personalIncome_primaryIncome_netHousehold` | CH | net income |
| 3 | `personalIncome_chfPerYear_chfPerYear` | CH | annual bonus |
| 4 | `otherExpensesExistingContracts` | CH | existing leases |
| 5 | `personalExpenses_otherInfo_chfPerMonth` | CH | amount replaced |

| | | | |
|---|---|---|---|
| 6 | `personalData_personalInfo_civilStatus` | CH | • `single` = 1150<br>• `married` = 1700<br>• `divorced` = 1150<br>• `separated` = 1150<br>• `widowed` = 1150 |
| 7 | `personalExpenses_house_situation` | CH | • `partnerInLife` = 600<br>• `livingAlone` = 100<br>• `residentialCommunity` = 50<br>• `withParents` = 0<br>• `singleParent` = 150 |
| 8 | `expences_childrenUnderSevenYears` | CH | 400 |
| 9 | `expences_childrenBetweenSevenAndTwelveYears` | CH | 400 |
| 10 | `expences_childrenOverTwelveYears` | CH | 600 |
| 11 | `basic_living_expenses` | CH | `personalData_personalInfo_civilStatus` + `personalExpenses_house_situation` |
| 12 | `children_under_7` | CH | `personalExpenses_otherInfo_childrenUnderSevenYears` * `expences_childrenUnderSevenYears` |
| 13 | `children_7_12` | CH | `personalExpenses_otherInfo_childrenBetweenSevenAndTwelveYears` * `expences_childrenBetweenSevenAndTwelveYears` |

| | | | |
|---|---|---|---|
| 14 | `children_over_12` | CH | `personalExpenses_otherInfo_childrenOverTwelveYears` * `expences_childrenOverTwelveYears` |
| 15 | `children` | CH | `children_under_7` + `children_7_12` + `children_over_12` |
| 16 | `expenditure` | CH | `basic_living_expenses` + `children` |
| 17 | `supplements` | CH | `personalExpenses_house_rentalCosts` + `personalExpenses_otherExpenses_Alimony_Costs` + `personalExpenses_otherInfo_regularExpenses` + `personalExpenses_otherExpenses_travelCosts` |