Credit Analytics Suite Package Scheme Guide

Lakshmi Krishnamurthy

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Introduction

The full suite of Credit Analytics libraries are contained in a few jar files – the Credit Product/Params/Curves definition interface library (CreditDefinition.jar), its corresponding reference implementation - CreditAnalytics jar file (drip.jar), and a comprehensive execution time based regression test suite – RegressionSuite (RegressionSuite.jar).

In release 1.6, both Credit Definition and Credit Product are available as part of a same code base and the same jar release – this may not be the case, however, in the subsequent releases. Regression Suite, however, continues to maintain its own separate code base.

Credit Product

CreditProduct.jar contains the definitions, the parameters needed for those definitions, and the associated helpers. In particular, it contains the following:

- Definition of all the product interfaces
- Definition of the product settings, the parameters, and the other valuation-related features
- Definition of all the relevant curve objects
- Definition of all the relevant market/quote parameters, their containers
- Comprehensive set of the holiday calendars and the day count conventions
- Assorted set of utility functions

Functional Group	**Functional Sub-group / Package / Module**	**Class**
org.drip.analytics	date	• DateTime • JulianDate
org.drip.analytics	daycount	• ActActDCParams • Convention • DateAdjustParams
org.drip.analytics	definition	• CreditCurve • Curve • DiscountCurve • FXBasisCurve • FXForwardCurve • ZeroCurve
org.drip.analytics	holiday	• Base

<table>
<tr><td></td><td></td><td>Fixed
Locale
Static
Variable
Weekend</td></tr>
<tr><td>org.drip.analytics</td><td>holset</td><td>LocationHoliday
All the other jurisdiction-specific holidays</td></tr>
<tr><td>org.drip.analytics</td><td>output</td><td>BasketMeasures
BondCouponMeasures
BondRVMeasures
BondWorkoutMeasures
ComponentMeasures</td></tr>
<tr><td>org.drip.analytics</td><td>period</td><td>CouponPeriod
CouponPeriodCurveFactors
LossPeriodCurveFactors
Period</td></tr>
<tr><td>org.drip.analytics</td><td>support</td><td>CurveProductHelper
GenericUtil
Logger</td></tr>
<tr><td>org.drip.param</td><td>definition</td><td>BasketMarketParams
CalibrationParams
ComponentMarketParams
ComponentQuote
CreditNodeTweakParams
CreditScenarioCurve
MarketParams
NodeTweakParams
Quote
RatesScenarioCurve</td></tr>
</table>

		• StandardCDXParams
org.drip.param	pricer	• PricerParams
org.drip.param	valuation	• CashSettleParams • ExerciseInfo • QuotingParams • ValuationParams • WorkoutInfo
org.drip.product	definition	• BasketMarketParamRef • BasketProduct • Bond • BondProduct • CalibratableComponent • Component • ComponentMarketParamRef • CreditComponent • CreditDefaultSwap • FXForward • FXSpot • RatesComponent
org.drip.product	params	• CDXIdentifier • CouponSetting • CreditSetting • CurrencyPair • CurrencySet • EmbeddedOptionSchedule • FloaterSchedule • FloaterSetting • IdentifierSet • NotionalSetting

		• PeriodGenerator • PeriodSet • QuoteConvention • RateSetting • TerminationSetting • TreasuryBenchmark • TsyBmkSet • Validatable
org.drip.service	stream	• Serializer

Credit Analytics

CreditAnalytics jar file (drip.jar) consists of the CreditAnalytics implementation and creation of the CreditProduct defined curve, product, and parameter interfaces. In particular, it contains the following:

- Creation and implementation of the various curve interfaces (discount curve, credit curve, FX curve, etc.)
- Creation and implementation of the various product interfaces
- Creation and implementation of the various parameter interfaces
- Reference and marks feed loaders
- Curve/product/parameter environment object containers and manipulators
- Extensive set of samples and testers

Functional Group	Functional Sub-group / Package / Module	Class
org.drip.analytics	calibration	• BracketingCalibrator • ComponentCalibrator • CreditCurveScenarioGenerator • IRCurveScenarioGenerator • NewtonRaphsonCalibrator
org.drip.analytics	creator	• CreditCurveBuilder • DiscountCurveBuilder • FXBasisCurveBuilder • FXForwardCurveBuilder • ZeroCurveBuilder
org.drip.analytics	curve	• CalibratedCreditCurve

		• CalibratedDiscountCurve • DerivedFXBasisCurve • DerivedFXForwardCurve • DerivedZeroCurve
org.drip.feed	loader	• BondRefData • CDXRefData • CreditStaticAndMarks
org.drip.param	config	• ConfigLoader
org.drip.param	creator	• BasketMarketParamsBuilder • ComponentMarketParamsBuilder • ComponentQuoteBuilder • CreditScenarioCurveBuilder • MarketParamsBuilder • QuoteBuilder • RatesScenarioCurveBuilder
org.drip.param	market	• BasketMarketParamSet • ComponentMarketParamSet • ComponentMultiMeasureQuote • MarketParamsContainer • MultiSidedQuote • RatesCurveScenarioContainer
org.drip.product	creator	• BondBasketBuilder • BondBuilder • BondProductBuilder • CashBuilder • CDSBasketBuilder • CDSBuilder • CDXRefDataBuilder • CDXRefDataHolder

		• EDFutureBuilder • FXForwardBuilder • FXSpotBuilder • IRSBuilder • StandardCDXManager
org.drip.product	credit	• BondBasket • BondComponent • CDSBasket • CDSComponent
org.drip.product	fx	• FXForwardContract • FXSpotContract
org.drip.product	rates	• CashComponent • EDFComponent • IRSComponent
org.drip.service	api	• CreditAnalytics
org.drip.service	bridge	• CreditAnalyticsProxy • CreditAnalyticsStub
org.drip.service	env	• BondManager • CDSManager • EnvManager • EODCurves • RatesManager • StaticBACurves
org.drip.service	sample	• BloombergCDSW • BondAnalyticsAPI • BondBasketAPI • BondLiveAndEODAPI • BondStaticAPI • CDSBasketAPI

		• CDSLiveAndEODAPI • CreditAnalyticsAPI • DaycountAndCalendarAPI • FXAPI • RatesAnalyticsAPI • RatesLiveAndEODAPI
org.drip.tester	functional	• BondAnalyticsTestSuite • CreditAnalyticsTestSuite • ProductTestSuite • SerializerTestSuite

Regression Suite

~~CreditAnalytics jar file (drip.jar) consists of the CreditAnalytics implementation and creation of the CreditProduct defined curve, product, and parameter interfaces~~Regression Suite was designed to perform analytics and system level test of the Credit Analytics Suite at the time of release, with aim towards towards incorporating execution time statistics along with release stage unit/system tests In works in conjunction (and complements) other elaborate unit tests. In particular, it contains the following:

- Generates a distribution of clock execution times as well the central/extremal statistical measures
- Measures the intialization/event execution delays
- Precisely measures the unit execution times by isolating the core execution fomr the test preparation/post processing
- Generates multi-level, scenario specific run details in an output for that is compace, processable, and can be used to create further statistics
- Provides built-in process controls, invocation freedom, and execution without side effects

~~curve, FX curve, etc.)~~

~~Creation and implementation of the various product interfaces~~

~~Creation and implementation of the various parameter interfaces~~

~~Reference and marks feed loaders~~

~~Curve/product/parameter environment object containers and manipulators~~

~~Extensive set of samples and testers~~

Functional Group	Functional Sub-group / Package / Module	Class
org.drip.regression	core	• RegressionEngine • RegressionRunDetail • RegressionRunOutput • RegressionUtil • ~~NewtonRaphsonCalibrator~~RegressionSet • UnitRegressionExecutor • UnitRegressionStat • UnitRegressor