

KInterpolatedYoYOptionletVolatilitySurface< KInterpolatedYoYOptionletVolatilitySurface< Interpolator1D > >(3)

NAME

KInterpolatedYoYOptionletVolatilitySurface< Interpolator1D > – K-interpolated YoY optionlet volatility.

SYNOPSIS

```
#include
<ql/experimental/inflation/kinterpolatedyoyoptionletvolatilitysurface.hpp>
Inherits YoYOptionletVolatilitySurface.
```

Constructor

```
calculate the reference date based on the global evaluation date
boost::shared_ptr< YoYCapFloorTermPriceSurface > capFloorPrices_
boost::shared_ptr< YoYInflationCapFloorEngine > yoyInflationCouponPricer_
boost::shared_ptr< YoYOptionletStripper > yoyOptionletStripper_
Interpolator1D factoryID_
Real slope_
bool lastDateisSet_
Date lastDate_
Interpolation tempKinterpolation_
std::pair< std::vector< Rate >, std::vector< Volatility >> slice_
KInterpolatedYoYOptionletVolatilitySurface (const Natural settlementDays, const Calendar &,
const BusinessDayConvention bdc, const DayCounter &dc, const Period &lag, const
boost::shared_ptr< YoYCapFloorTermPriceSurface > &capFloorPrices, const
boost::shared_ptr< YoYInflationCapFloorEngine > &pricer, const boost::shared_ptr<
YoYOptionletStripper > &yoyOptionletStripper, const Real slope, const Interpolator1D
&interpolator=Interpolator1D())
virtual Real minStrike () const
the minimum strike for which the term structure can return vols
virtual Real maxStrike () const
the maximum strike for which the term structure can return vols
virtual Date maxDate () const
the latest date for which the curve can return values
std::pair< std::vector< Rate >, std::vector< Volatility >> Dslice (const Date &d) const
virtual Volatility volatilityImpl (const Date &d, Rate strike) const
virtual Volatility volatilityImpl (Time length, Rate strike) const
virtual void performCalculations () const
```

Additional Inherited Members

Detailed Description

template<class Interpolator1D>

class QuantLib::KInterpolatedYoYOptionletVolatilitySurface< Interpolator1D >" K-interpolated YoY optionlet volatility.

The stripper provides curves in the T direction along each K. We don't know whether this is interpolating or fitting in the T direction. Our K direction interpolations are not model fitting.

An alternative design would be a FittedYoYOptionletVolatilitySurface taking a model, e.g. **SABR** in the interest rate world. This could use the same stripping in the T direction along each K.

Bug

Tests currently fail.

Member Function Documentation

Volatility volatilityImpl (Time length, Rate strike) const [protected], [virtual]

Implements the actual volatility surface calculation in derived classes e.g. bilinear interpolation. N.B. does not derive the surface.

Implements **YoYOptionletVolatilitySurface**.



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Author

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