

# EQ Fee Projection

The EQ fee can be calculate from onchain data. Below is the code we use to project the EQ Fee on the UI. If your curious about more details to swap math take a look[here](#) .

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Copy functiongetEquilibriumFee( _idealBalance:CurrencyAmount, _beforeBalance:CurrencyAmount, _amount:CurrencyAmount,
_fee:FeeLibraryV02 ): { eqFee:CurrencyAmount; protocolSubsidy:CurrencyAmount} {
constafterBalance=_beforeBalance.subtract(_amount)

letsafeZoneMaxCurrency=_idealBalance.multiply(_fee.delta1Rate)
constsafeZoneMax=newFraction(safeZoneMaxCurrency.numerator,safeZoneMaxCurrency.denominator)
constsafeZoneMinCurrency=_idealBalance.multiply(_fee.delta2Rate)
constsafeZoneMin=newFraction(safeZoneMinCurrency.numerator,safeZoneMinCurrency.denominator)
constproxyBeforeBalanceCurrency=_beforeBalance.lessThan(safeZoneMax)?_beforeBalance:safeZoneMax
constproxyBeforeBalance=newFraction(proxyBeforeBalanceCurrency.numerator,proxyBeforeBalanceCurrency.denominator)

leteqFee=CurrencyAmount.fromRawAmount(_amount.currency,JSBI.BigInt(0))
letprotocolSubsidy=CurrencyAmount.fromRawAmount(_amount.currency,JSBI.BigInt(0))

if(afterBalance.greaterThan(safeZoneMax)||afterBalance.equalTo(safeZoneMax)) { // no fee zone, protocol subsidizes it
eqFee=_amount.multiply(_fee.protocolSubsidyRate) protocolSubsidy=eqFee
}elseif(afterBalance.greaterThan(safeZoneMin)||afterBalance.equalTo(safeZoneMin)) { // safe zone
eqFee=getTrapezoidArea(_amount.currency,_fee.lambda1Rate,ZERO,safeZoneMax,safeZoneMin,proxyBeforeBalance,afterBalance)
}else{ // danger zone if(_beforeBalance.greaterThan(safeZoneMin)||_beforeBalance.equalTo(safeZoneMin)) { // across 2 or 3 zones
// part 1 eqFee=eqFee.add(
getTrapezoidArea(_amount.currency,_fee.lambda1Rate,ZERO,safeZoneMax,safeZoneMin,proxyBeforeBalance,safeZoneMin) ) //
part 2 eqFee=eqFee.add(
getTrapezoidArea(_amount.currency,_fee.lambda2Rate,_fee.lambda1Rate,safeZoneMin,ZERO,safeZoneMin,afterBalance) ) }else{
// only in danger zone // part2 only eqFee=eqFee.add(
getTrapezoidArea(_amount.currency,_fee.lambda2Rate,_fee.lambda1Rate,safeZoneMin,ZERO,_beforeBalance,afterBalance) ) } }

return{ eqFee, protocolSubsidy, } }
```

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