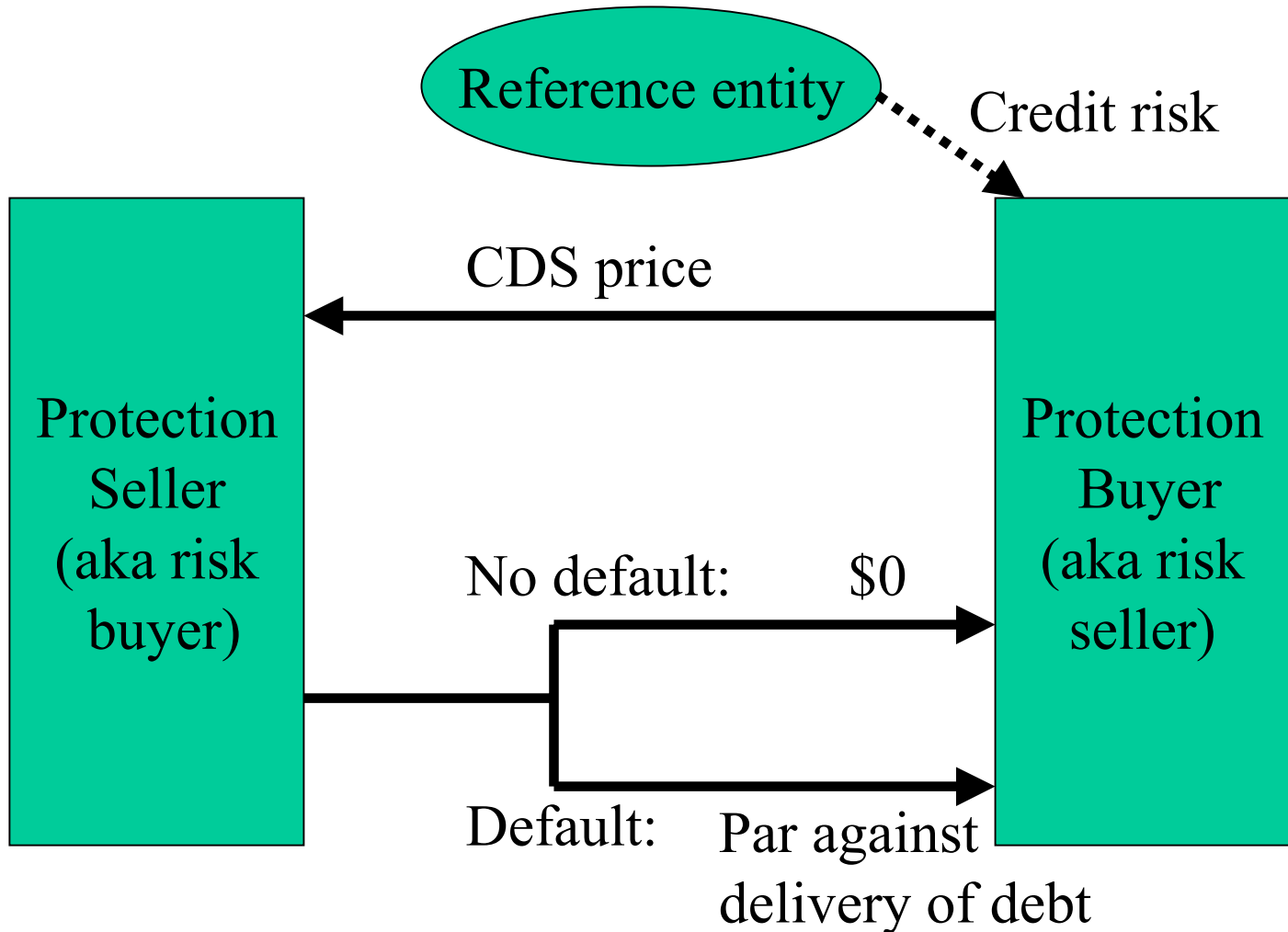


The price of credit risk in credit default swap and corporate bond markets

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What is a credit default swap?



What constitutes a default event?

1. Failure to pay,
2. Bankruptcy, or
3. Restructuring

1999 ISDA documentation applied to all EU CDS in our data
“Mod R” for US CDS since 11/5/2001

Memo: “Mod Mod R” and “XR” also now traded

Arbitrage

Intuition

Default risky bond plus CDS protection against default equals default risk-free bond

Exact relationship

Risky FRN spread over risk-free rate equals CDS price

Almost exactly

Spread of risky coupon bond close to par.... equals CDS price

Data

CDS data: 5-year quotes from CreditTrade (broker) plus JP Morgan Chase on 200+ reference entities

Bond data: 2 liquid bonds spanning 5 year maturity, interpolated yield

Intersection: 33 reference entities

Time period: Daily, Jan 2001 to June 2002

Reference entities

Financials (15)

JPMC, Citi, Goldman Sachs, Barclays, Deutsche

Telecoms (6)

BT, DT, FT, Siemens, Vodafone

Autos (5)

Ford, GM, Daimler, Fiat, Volvo

Others (7)

AOL, Wal-Mart, Total Fina Elf

Tests of arbitrage

CDS price should equal credit spread

Or “basis” should equal zero

– basis = CDS price - credit spread

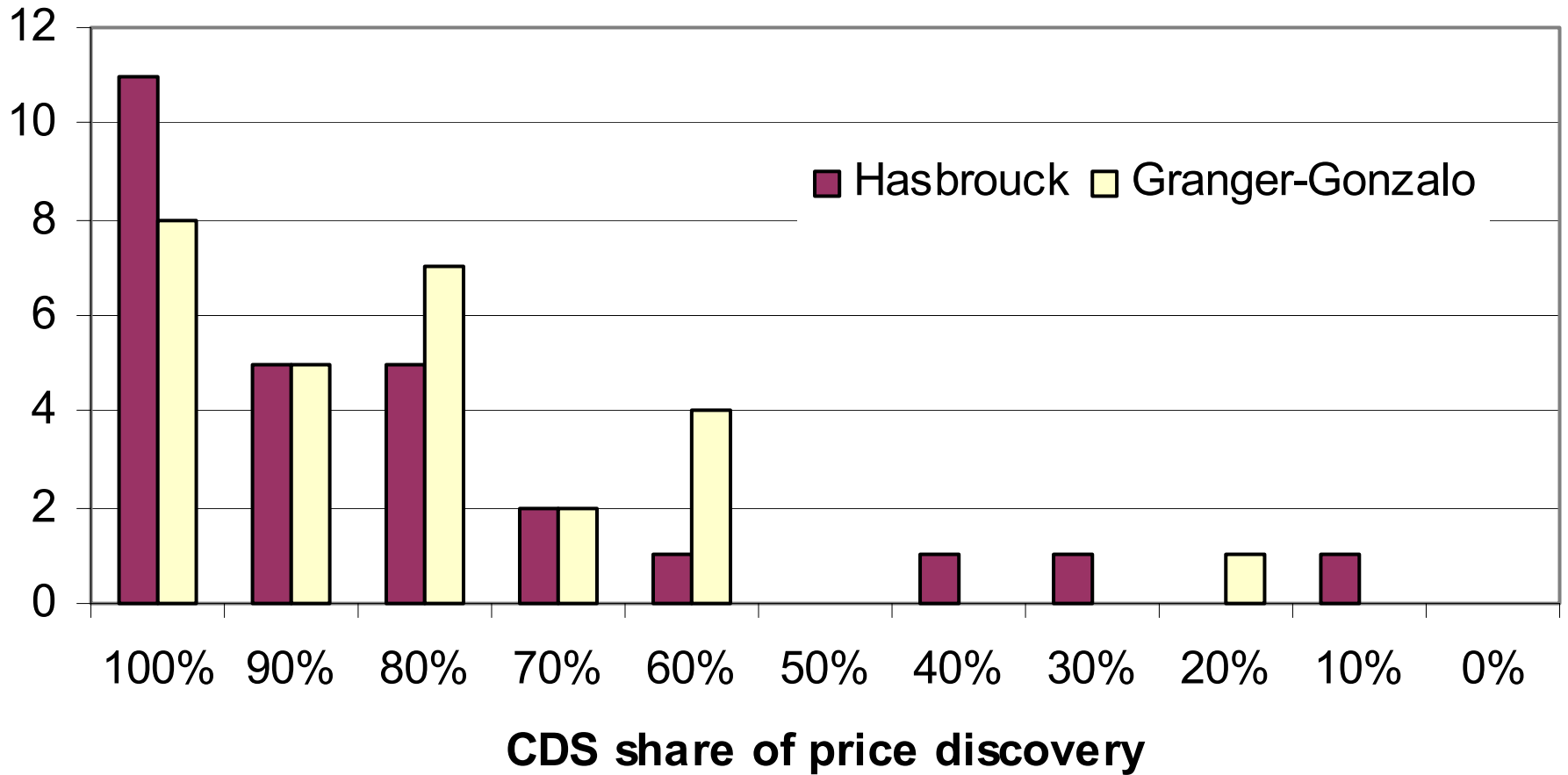
Average basis

– 16 US firms: 3.0 bp (basis stationary for 16/16)

– 17 EU firms: 7.5bp (basis non-stationary for 6/17)

In EU, the CDS market prices credit risk higher than the bond market does

Price discovery

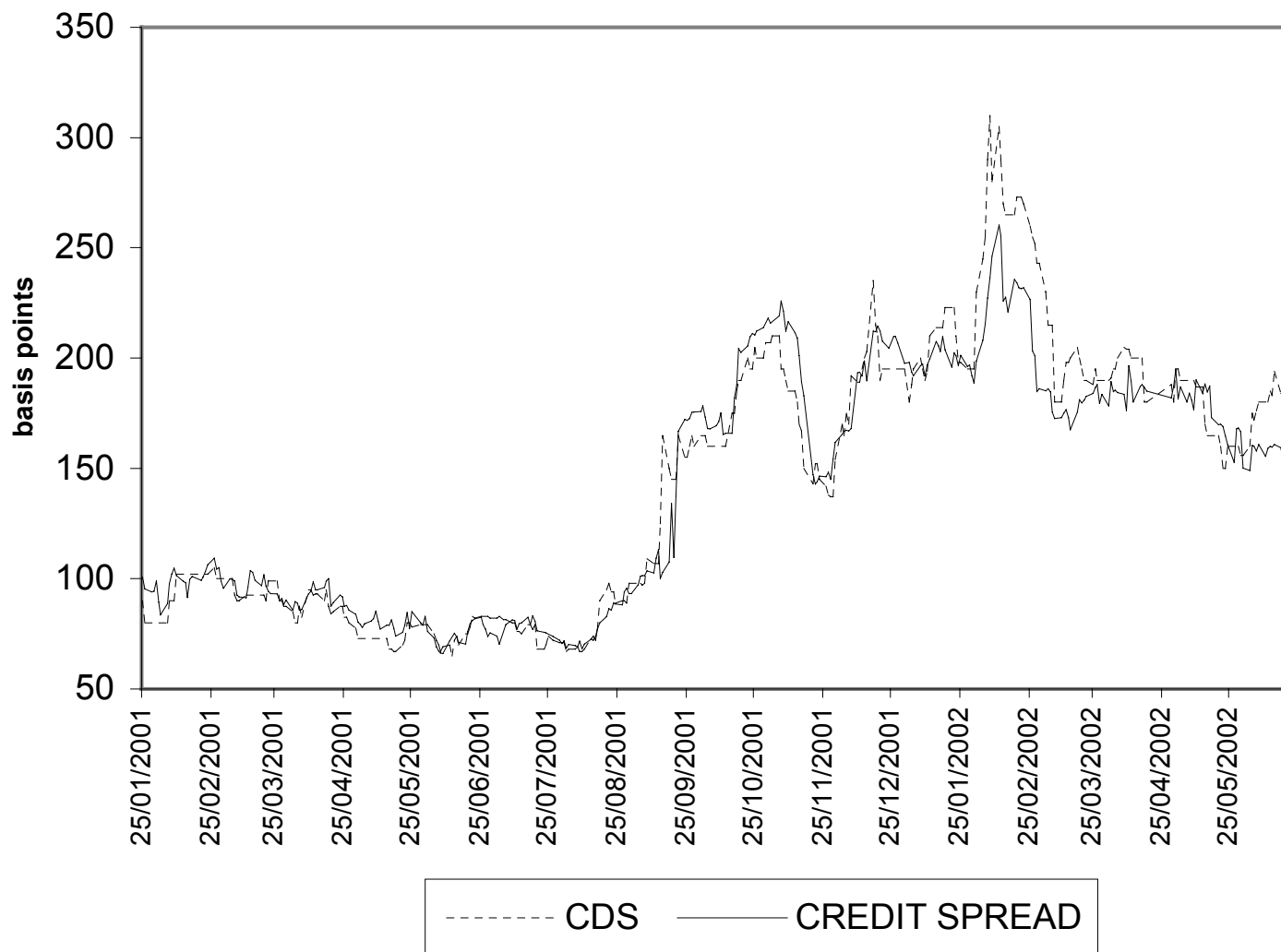


Why do CDS lead?

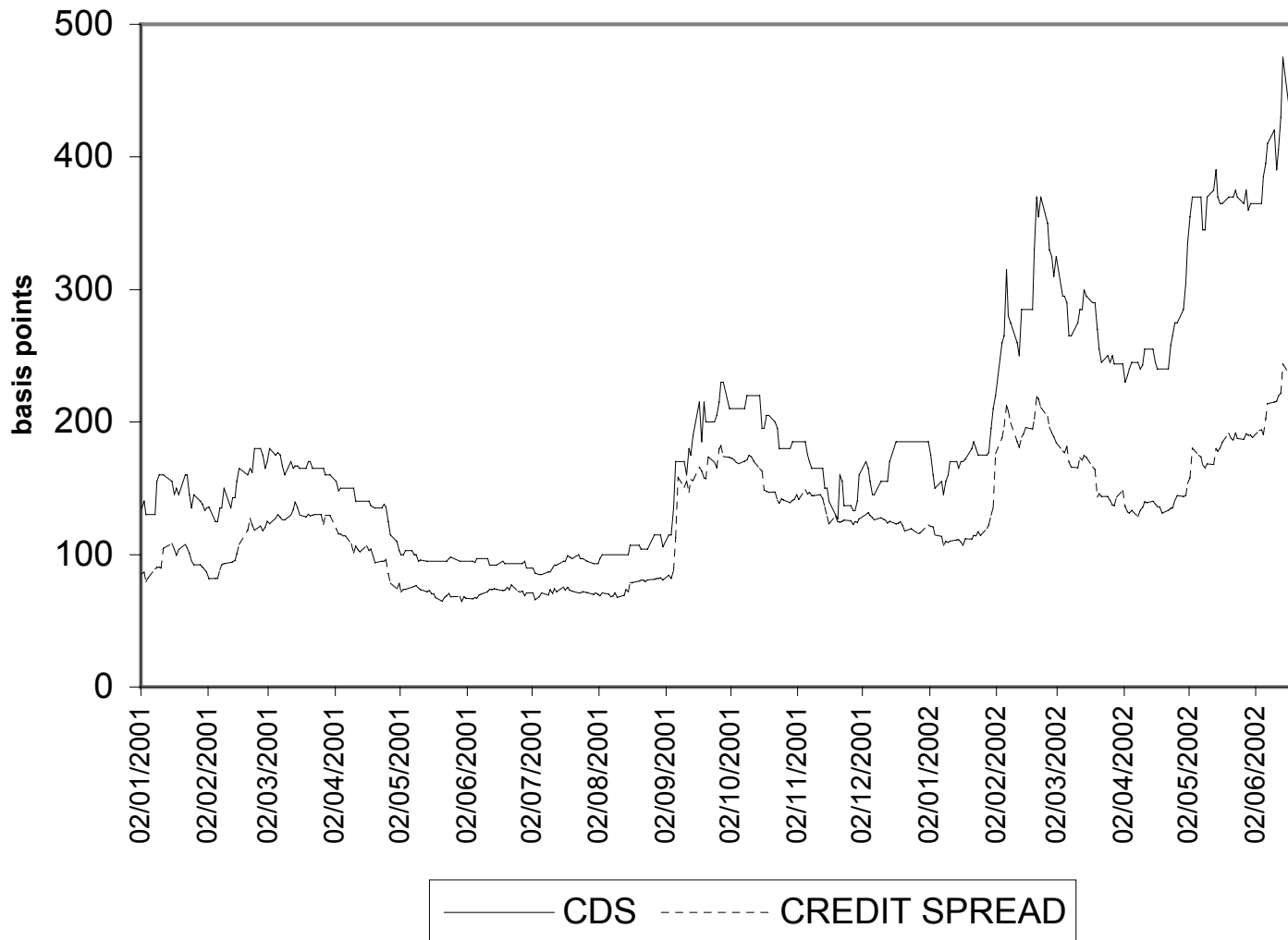
That's where the informed traders trade:

1. Easiest, most liquid way to trade credit risk in size, especially if shorting credit risk
2. Bond market trades bond credit risk, CDS market trades bond plus loan plus counterparty credit risk

Ford



France Telecom



Explanation #1: Repo costs

Bond owners:

1. earn credit spread as compensation for credit risk
2. can also lend bonds through “repo” market

Usually earns negligible fee (1-2 basis point)

May earn high fee if bond is in demand by short-sellers

Credit spread needs to be adjusted for repo costs

Repo costs

JP Morgan, 16/8/2002

18 bonds with average basis of 103 basis points

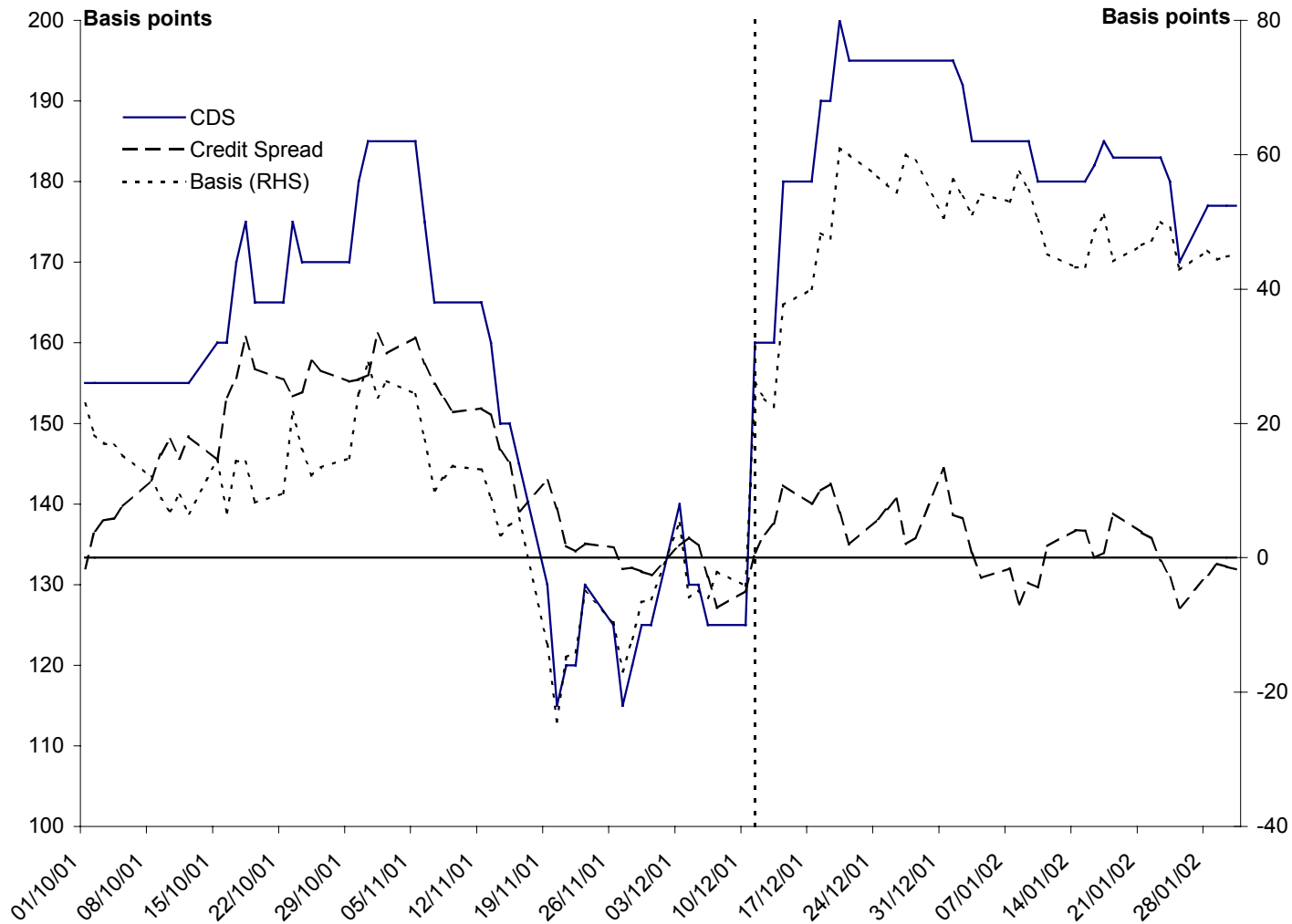
Including repo costs, average basis just 13bp

US firms: 109bp → 1bp

EU firms: 96bp → 29bp

Large basis remains for EU firms after adjusting for repo costs

Explanation # 2: Cheapest to deliver option



Bottom lines

1. Credit spread *underestimates* true price of credit risk by excluding repo costs
2. CDS price *overestimates* true price of credit risk if it includes a CTD option
3. CDS markets discover 80% of price of credit risk
4. CDS markets 'lead' by around 1 week