12.5 Swaps
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A swap is an agreement to exchange future cash flow streams.

"Plain Vanilla" interest rate swap.

Two parties, usually banks, agree to swap interest payments.

For example: fixed rate payments, for adjustable rate payments.

Banks agree on notional principal: (also, notational)

Notional principal not exchanged, but will serve as figure to base payments.

One party pays fixed rate payments based on notional payments.

Other party pays adjustable rates based on some benchmark rate, e.g., London Interbank Offered Rate (LIBOR) rate.
Bank A pays B
fixed rate \( r \)
payments, based
on notional \( N \)
B receives $

P.V. of stream
\[
= rN d_{t=0} + rN d_{t=1} + rN d_{t=2} + rN d_{t=3}
\]
\[
= rN \sum_{j=1}^{4} d_{t=j}
\]

Bank B pays A
floating rate \( c_i \)
payments, based
on notional \( N \)
\( c_i \) is known at \( t=0 \):
rate for lending from \( t=0 \) to \( t=1 \).
\( c_i \) is known at \( t=i \)
rate for lending from \( t=i \) to \( t=i+1 \)