

MARKETS AND GAIN FROM TRADE

Key to maximise the value (profit) from a commodity is allocating it in such a way as to equate the value of the marginal product generated by the commodity in its alternative uses

$$\text{i.e. } VMP_A = VMP_B$$

If violate this - eg $VMP_A(x_A) = \$20$

$$VMP_B(x_B) = \$15$$

then can increase joint surplus by reallocating the commodity until the VMP's are equated

In this example, transferring a unit of x from B to A produces a net gain of \$5.

This is known as the GAIN FROM TRADE

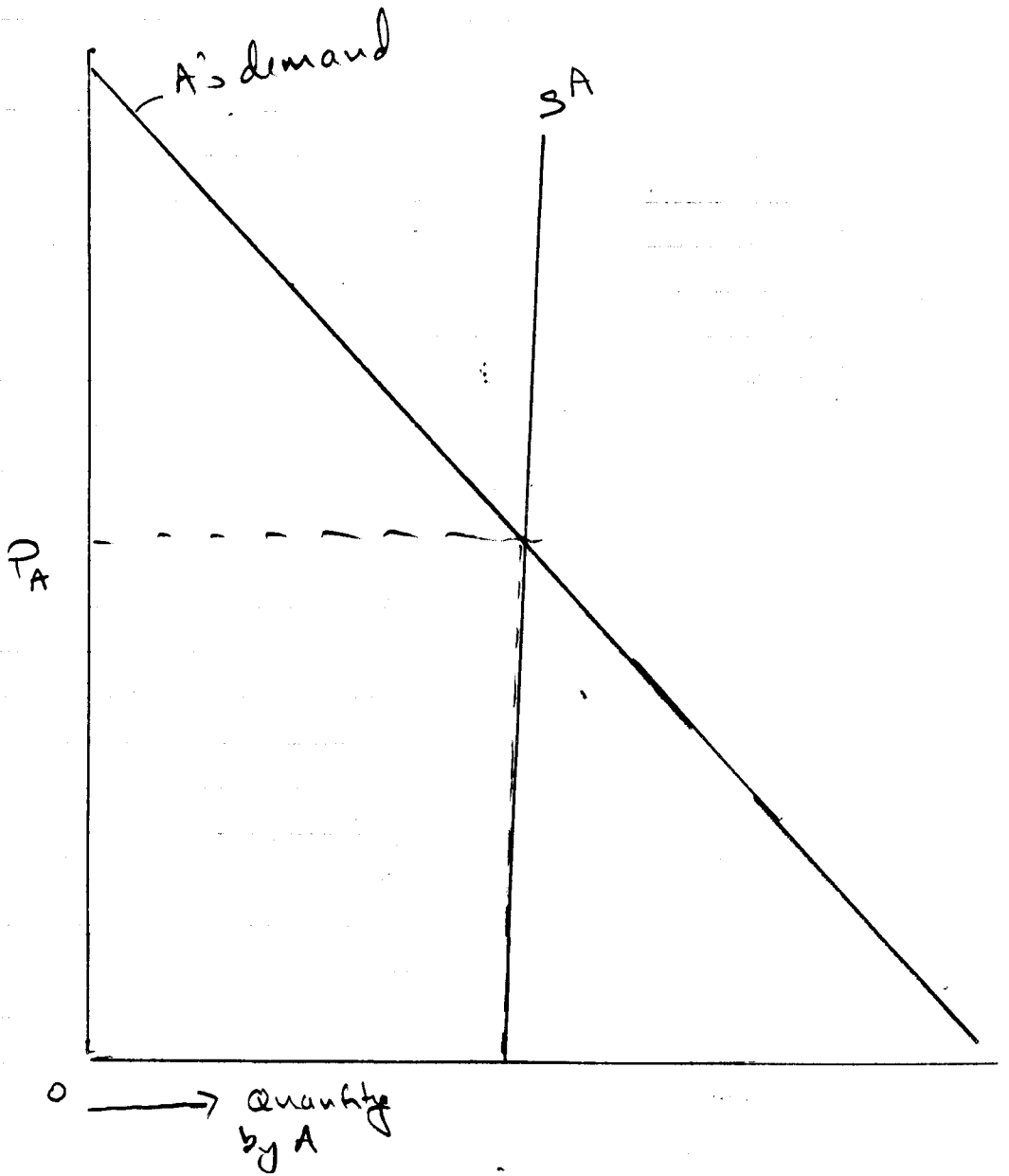
It will be shared between the two parties in some way.

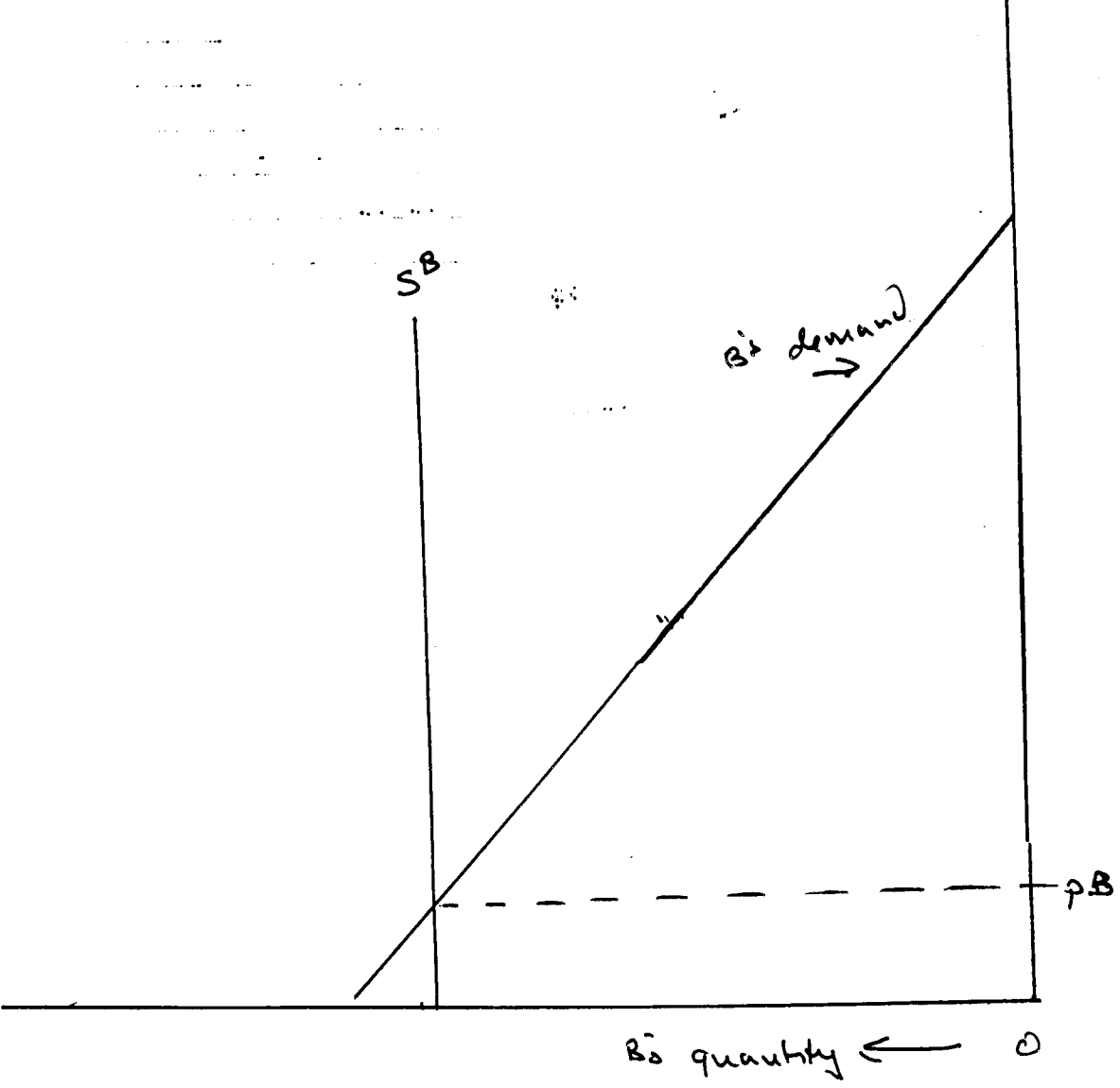
The existence of markets permits gains from trade to be exploited.

The potential gains from trade are larger:

The greater the diversity among producers
with respect to production technology + productivity
" " to quantities owned

If both parties have identical VMP's and use identical quantities, they have nothing to gain from trade.





Separate Decision

$$x^A = a - bp = s^A$$

\Rightarrow

p^A

x^A

$= s^A$

$$x^B = c - dp = s^B$$

\Rightarrow

p^B

x^B

Market combining both parties

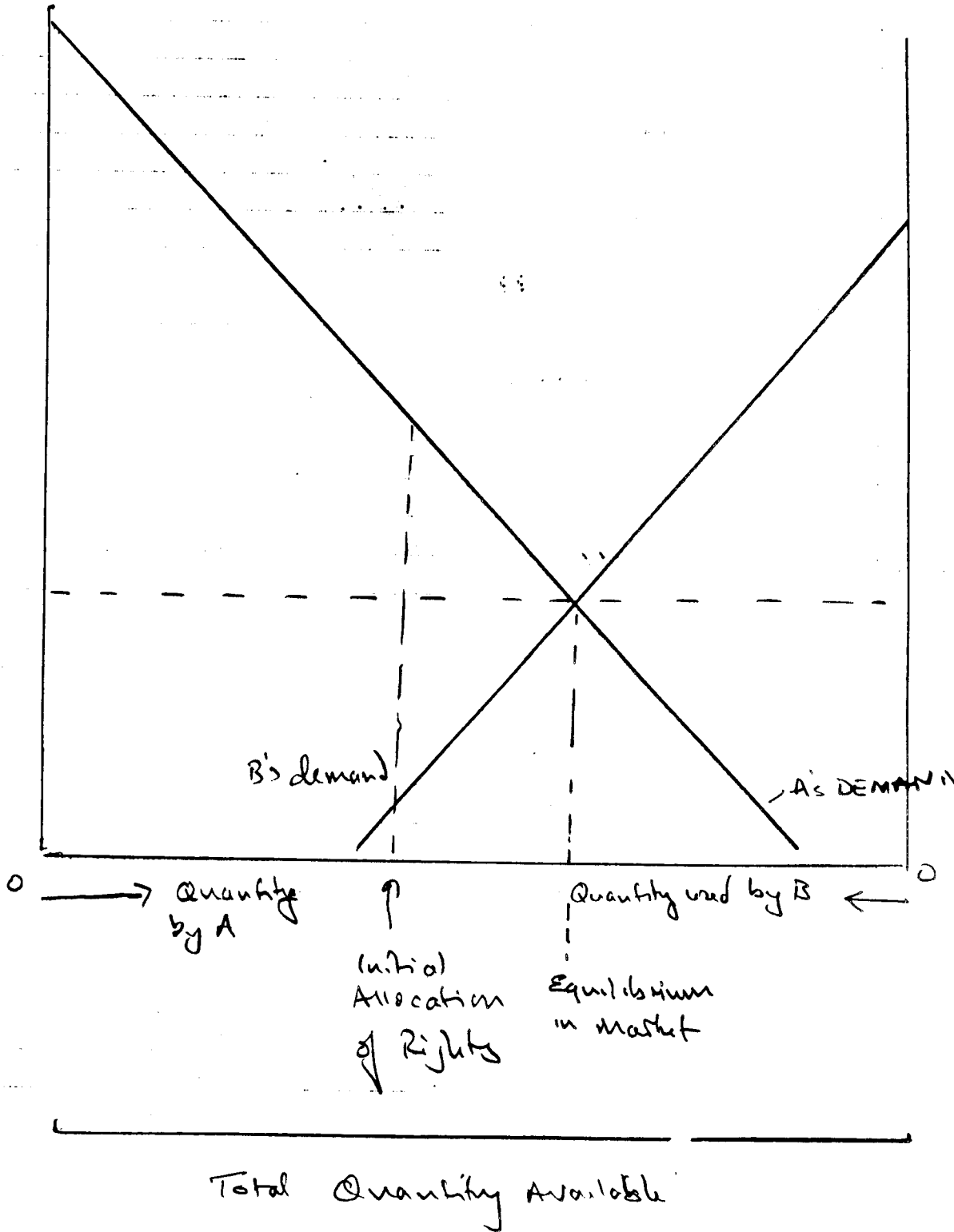
$$x^A + x^B = (a + c) - (b + d)p = s^A + s^B$$

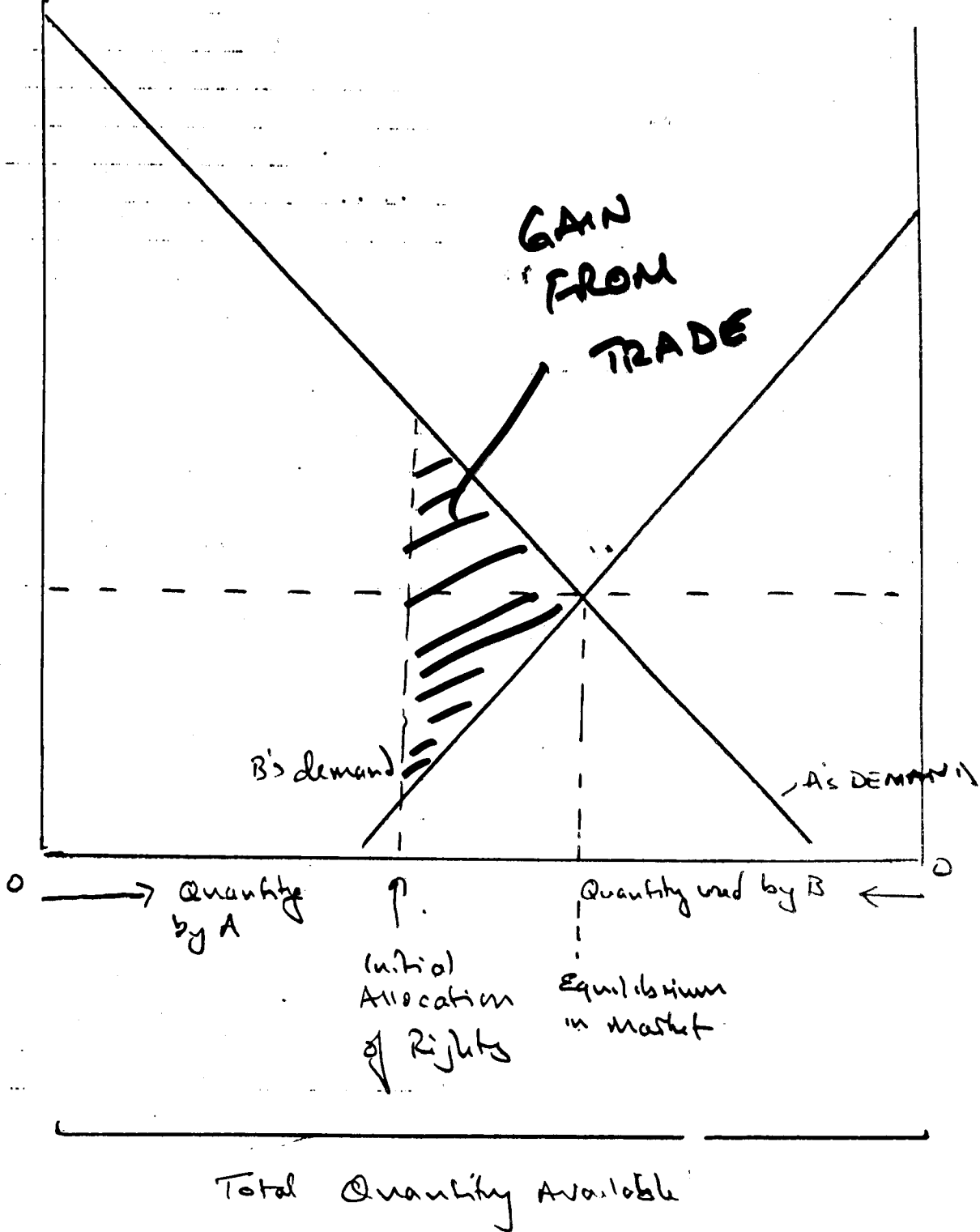
\Rightarrow

p^*

x^{A*}

x^{B*}





Existing situation in California is a patchwork
of water rights owned by individuals and water
districts, many of them unquantified, with limited
trading

Legal Impediments to Water Rights Transfers in CA

An effective market requires well defined (certain) and flexible rights
Tenure uncertainty arises from:

The uncertain (unquantified) character of riparian rights

Uncertainty as to appropriative rights

- absence of maximum quantity limitations on certain
appropriative rights

Presence of dormant municipal appropriatives
and SWP filings p 17-20

Impact of State Constitutional Mandate Requiring the Reasonable
Beneficial Use of Water

Why no (not more) markets?

Statutory restrictions on transfers

Internal operating rules of districts

political power of district

interference with other functions of district

External effects

Lack of transport/storage capacity

Other Economic reasons

Local trades occur outside a market (swaps)

Timing is crucial

Irreversibility of sale makes parties hesitate

Third Party Effects (~ Externalities)

(A) Economic impacts on the local economy

(B) impact on streamflow downstream
(return flows)

(C) impact on groundwater pumping,

whether or not these externalities are relevant depends on whether or not one feels those who are adversely affected have a legitimate property right.