PHYSICAL ENDOWMENT

$$\omega = (\omega_1, \omega_2)$$

PRICES

$$p_1, p_2$$

$$m(p_1, p_2) = \omega_1 p_1 + \omega_2 p_2$$

INCOME DEPENDS ON PRICES

$$\Delta p_1 < 0 \quad p_1' < p_1$$

$$m(p_1', p_2) = \omega_1 p_1' + \omega_2 p_2$$

LOWER PRICE OF GOOD 1 CAUSES A LOWER MONEY INCOME

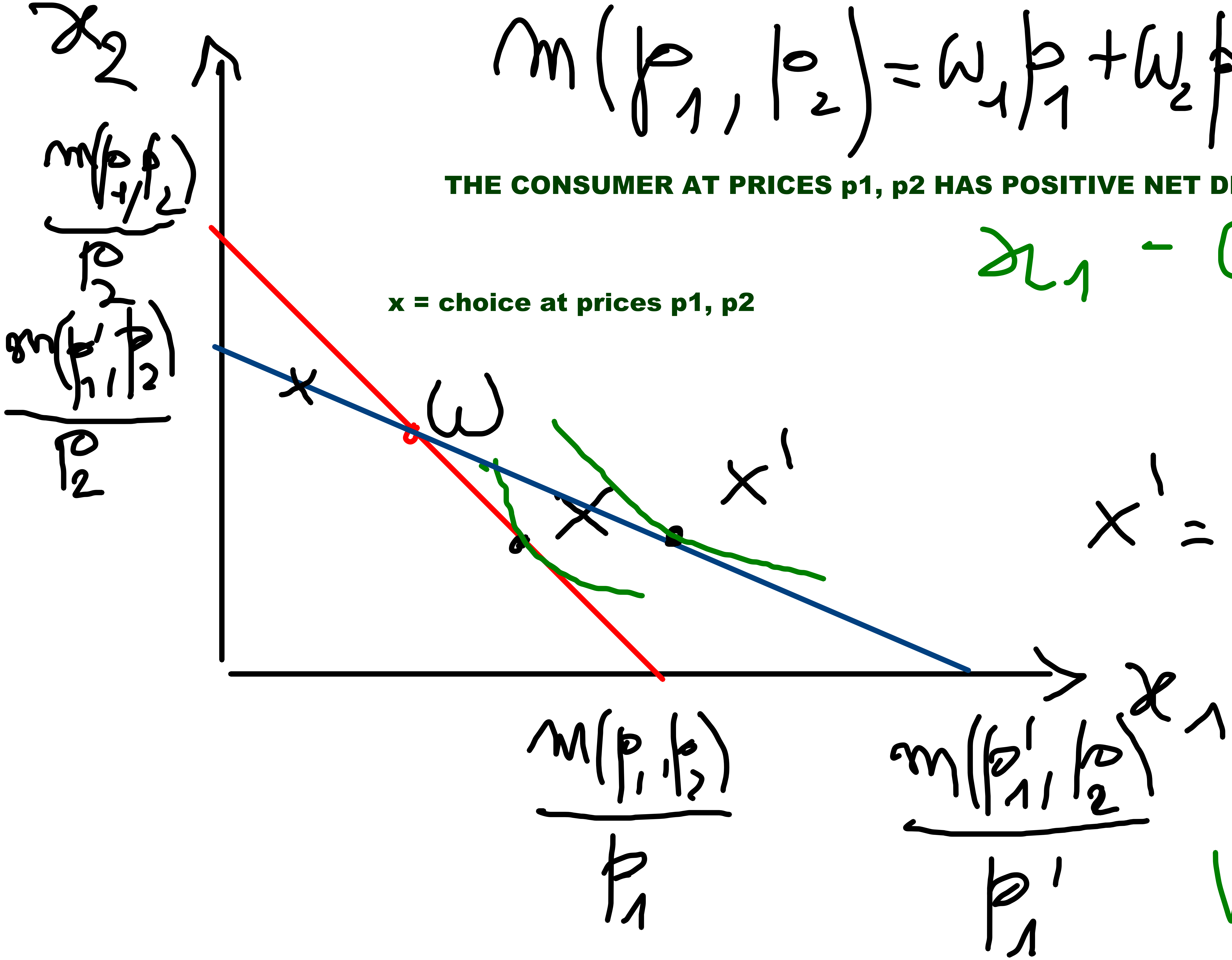
$$m(p_1', p_2) - m(p_1, p_2) = \omega_1 \Delta p_1$$

MONEY INCOME CHANGE HAS THE SIGN OF THE PRICE CHANGE.

$$m(p_1, p_2) = \omega_1 p_1 + \omega_2 p_2 \qquad p_1, p_2 \qquad \omega$$

THE CONSUMER AT PRICES p1, p2 HAS POSITIVE NET DEMAND OF GOOD 1

$$x_1 - \omega_1 > 0$$



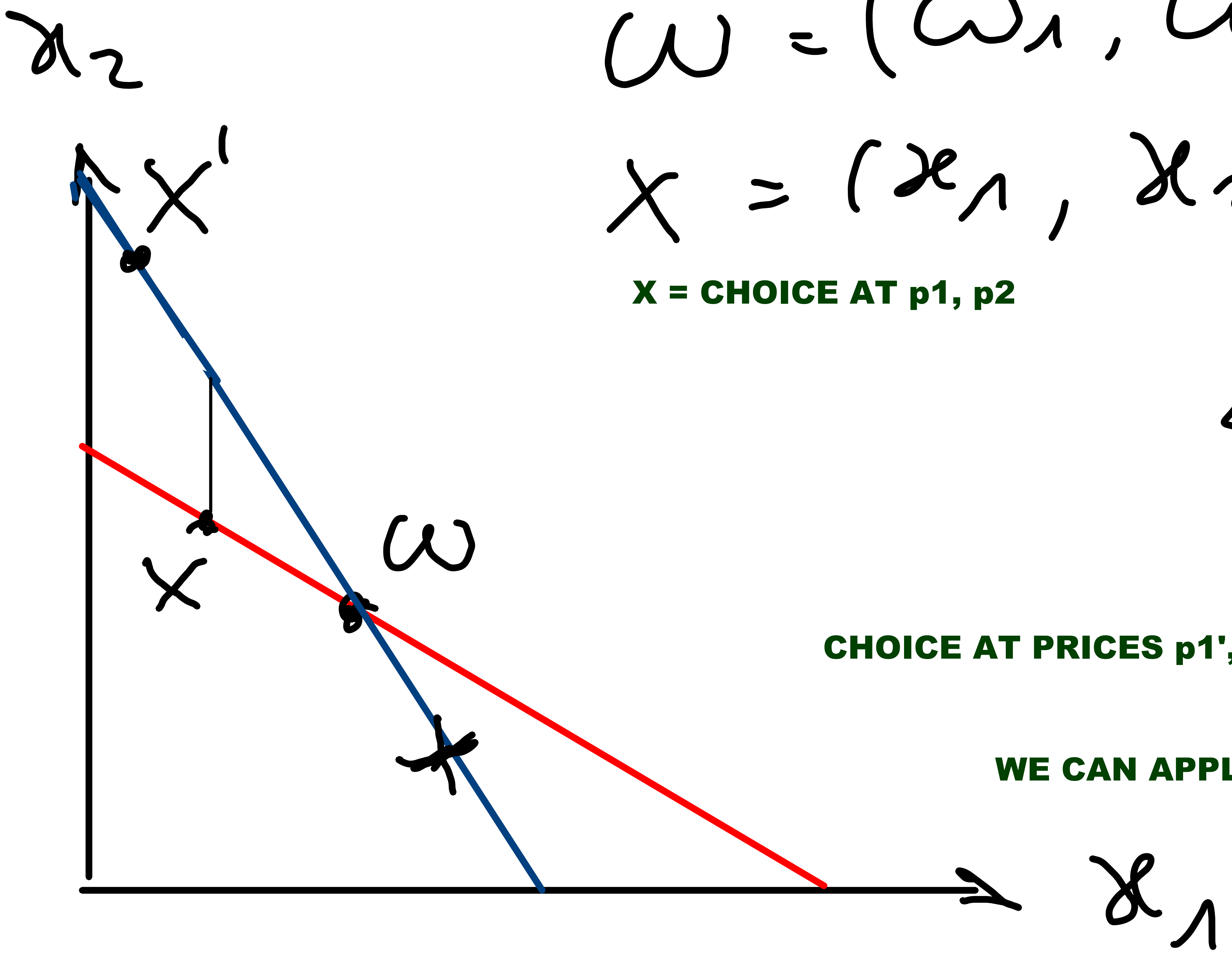
$$p_1' < p_1 \qquad m(p_1', p_2)$$

$$x' = (x_1', x_2')$$ **= CHOICE AT PRICES p1', p2**

WE CAN APPLY WARP AND CONCLUDE:

$$x_1' - \omega_1 > 0$$

Welfare higher at X' than at X



$$\omega = (\omega_1, \omega_2)$$

$$X = (x_1, x_2)$$

X = CHOICE AT p1, p2

$$p_1, \; p_2$$

$$x_1 - \omega_1 < 0$$

negative net demand (positive net supply) of good 1

$$\Delta p_1 > 0 \quad p_1' > p_1$$

CHOICE AT PRICES p1', p2 IS $X' = (x_1', x_2')$

WE CAN APPLY WARP AND CONCLUDE:

$$x_1' - \omega_1 < 0$$

POSITIVE NET SUPPLY AT PRICES p1', p2 AND
WELFARE IS HIGHER THAN IT WAS AT PRICES p1, p2

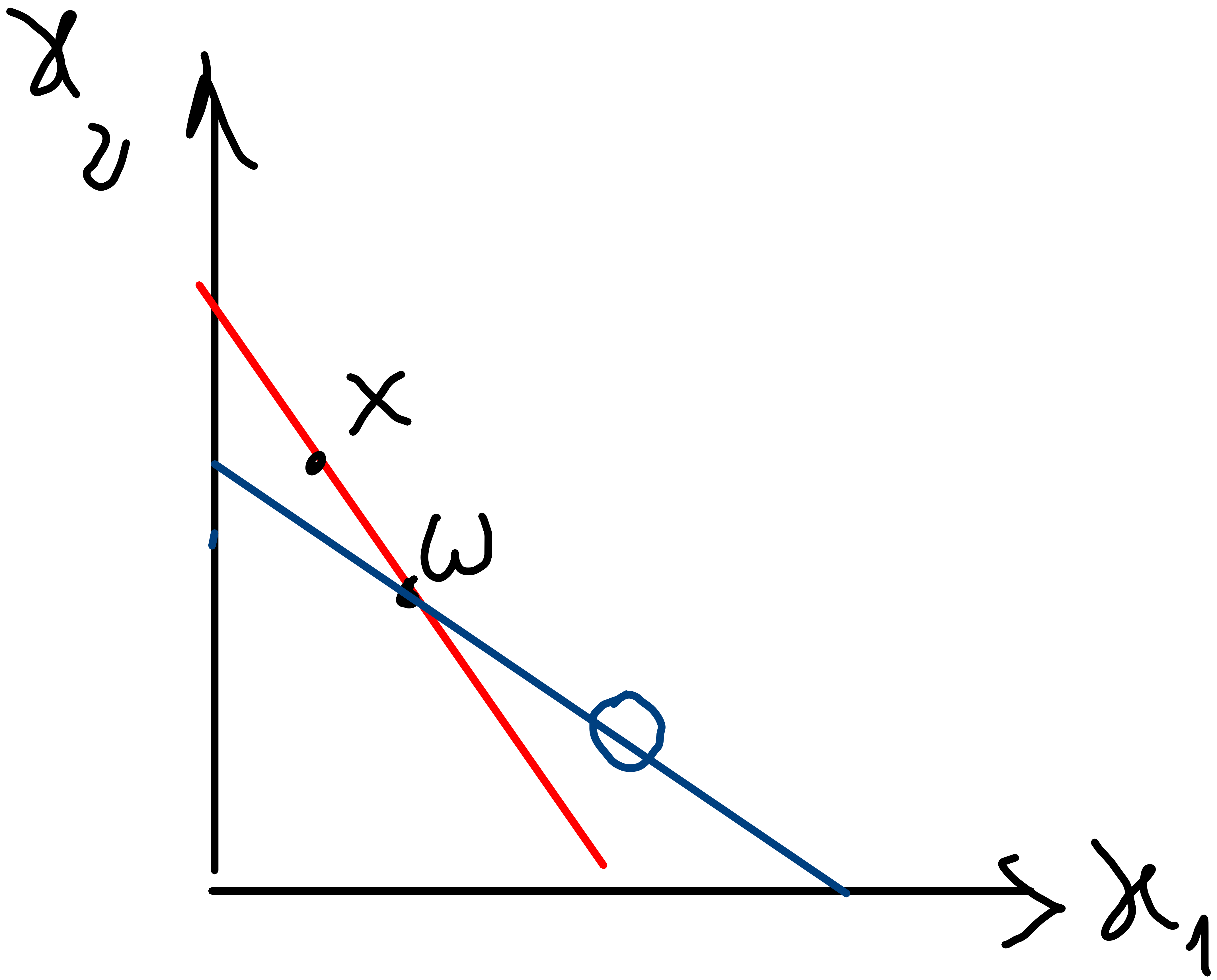
Proposition: consumer with endowment ω and well behaved preferences

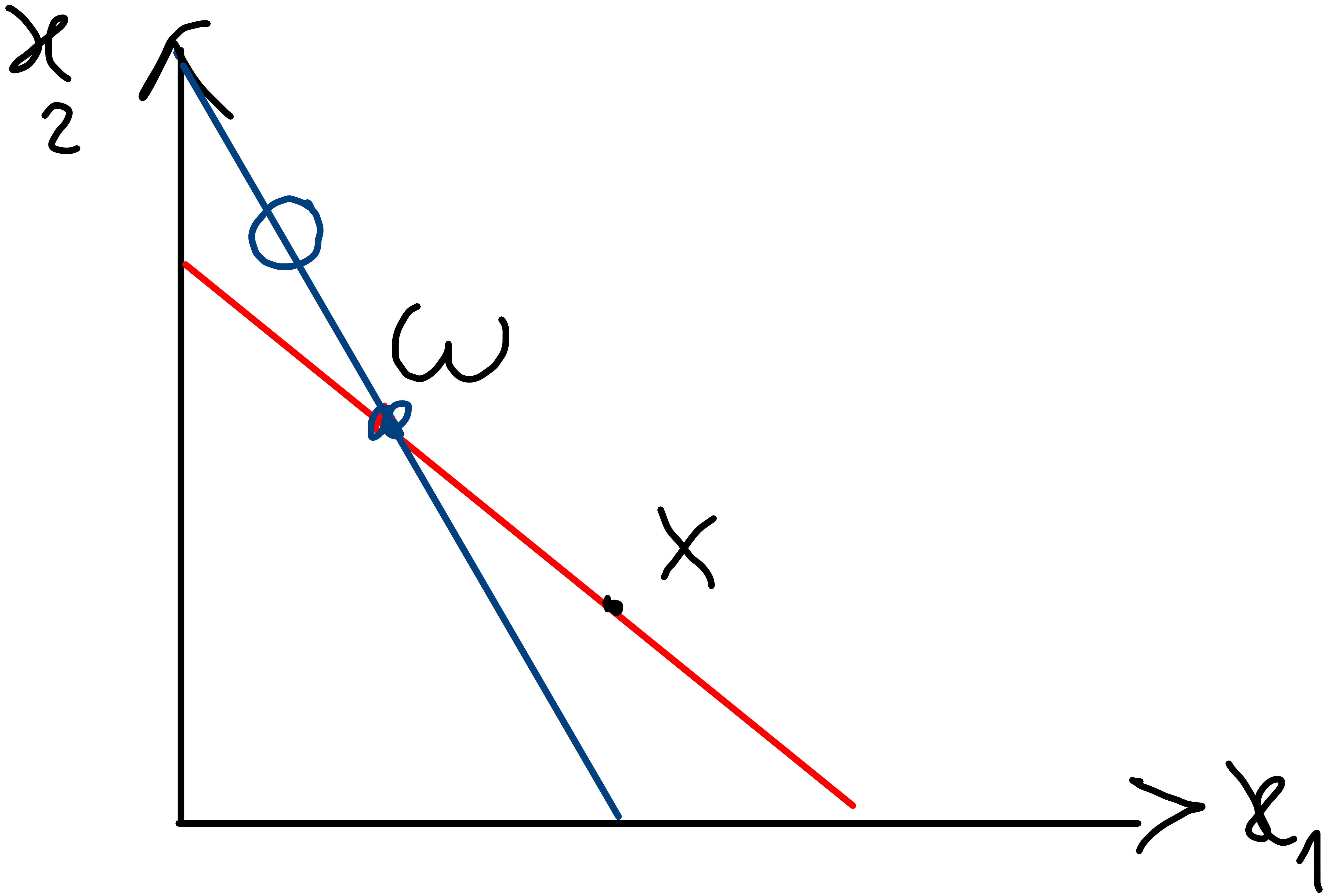
(1) If at prices p_1, p_2 the choice is $X = (x_1, x_2)$ and $x_1 - \omega_1 > 0$, then if $\Delta p_1 < 0$ at the new prices the choice $X' = (x_1', x_2')$ is s.t. $x_1' - \omega_1 > 0$ and welfare is strictly higher

(2) if at prices p_1, p_2 the choice is $X = (x_1, x_2)$ s.t. $x_1 - \omega_1 < 0$,

then if $\Delta p_1 > 0$ the choice X' at new prices is s.t. $x_1' - \omega_1 < 0$

and welfare is strictly higher





IF CONSUMER HAS POSITIVE NET SUPPLY AT PRICES p1, p2 AND THE PRICE OF GOOD 1 FALLS, WE CANNOT APPLY WARP. WE DO NOT KNOW IF THE CONSUMER WILL REMAIN A NET SUPPLIER OR WILL BECOME A NET DEMANDER OF GOOD 1 AT NEW PRICES.

IF CONSUMER HAS POSITIVE NET DEMAND AT PRICES p1, p2 AND THE PRICE OF GOOD 1 INCREASES, WE CANNOT APPLY WARP. WE DO NOT KNOW IF THE CONSUMER WILL REMAIN A NET DEMANDER OR WILL BECOME A NET SUPPLIER OF GOOD 1 AT NEW PRICES.

$e_1 = x_1 - \omega_1$

$s_1 = \omega_1 - x_1$

x_1 = gross demand of good 1

Δ P.P. caused by Δp_1

Δ PP

caused by Δp_1 for given and constant money income $-\bar{x}_1 \Delta p_1$

caused by change in money income $\omega_1 \Delta p_1$

$$\Delta PP = \omega_1 \Delta p_1 - \bar{x}_1 \Delta p_1 = (\omega_1 - \bar{x}_1) \Delta p_1$$

PP = purchasing power

SLUTSKY Equation

$$\frac{\Delta x_1}{\Delta p_1} = \underset{-}{\frac{\Delta x_1^s}{\Delta p_1}} + \underset{+}{\frac{\Delta x_1^m}{\Delta PP}} \cdot \frac{\Delta PP}{\Delta p_1}$$

x_1 is normal

$$\frac{\Delta PP}{\Delta p_1} = \omega_1 - \bar{x}_1$$

$$\frac{\Delta PP}{\Delta p_1} < 0 \text{ if } \bar{x}_1 > \omega_1$$

X1 is an ordinary good

$$\frac{\Delta PP}{\Delta p_1} > 0 \text{ if } \bar{x}_1 < \omega_1$$

X1 may not be ordinary good

Leisure = R (rest)

x_2 = consumption $\quad p_2 = 1$

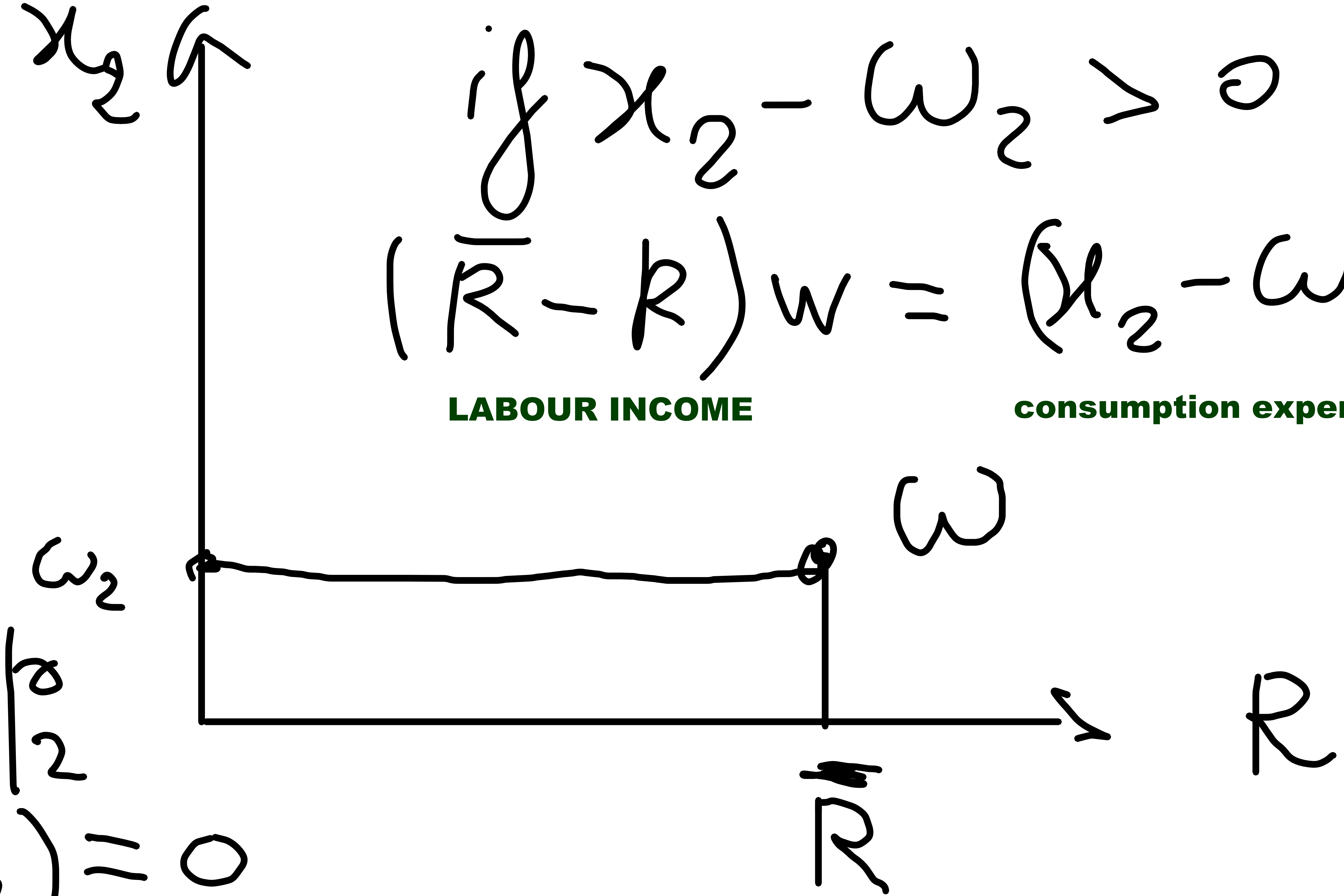
$$\omega = (\bar{R}, \omega_2)$$

$p_2 = 1 \quad p_R = w$

BUDGET CONSTRAINT:

$$\bar{R}w + \omega_2 p_2 = Rw + x_2 p_2$$

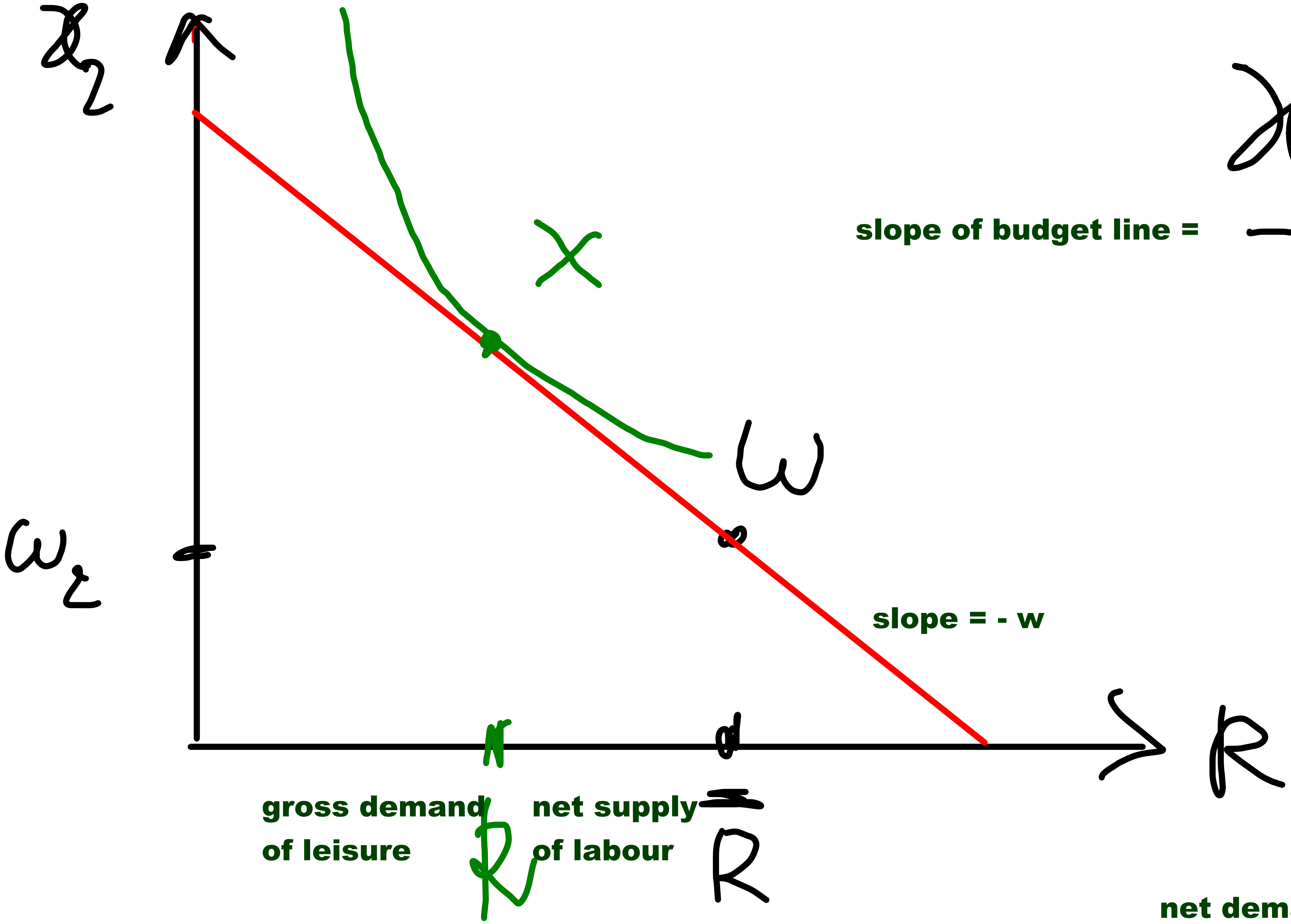
$$(\bar{R} - R)w + p_2(\omega_2 - x_2) = 0$$



if $x_2 - \omega_2 > 0$

$$(\bar{R} - R)w = (x_2 - \omega_2)p_2$$

LABOUR INCOME $\quad$ **consumption expenditure**



slope of budget line = $\dfrac{x_2 - \omega_2}{R - \bar{R}} = -\dfrac{w}{p_2}$

$R < \bar{R}$

net demand of rest = $R - \bar{R} < 0$

negative net demand of good 1

IF gross demand $R < \ddot{R}$ then:
NET DEMAND OF LEISURE IS NEGATIVE
(NET SUPPLY OF LABOUR IS POSITIVE):
IN CASE OF A CHANGE IN WAGE W
REST MAY NOT BEHAVE AS ORDINARY GOOD