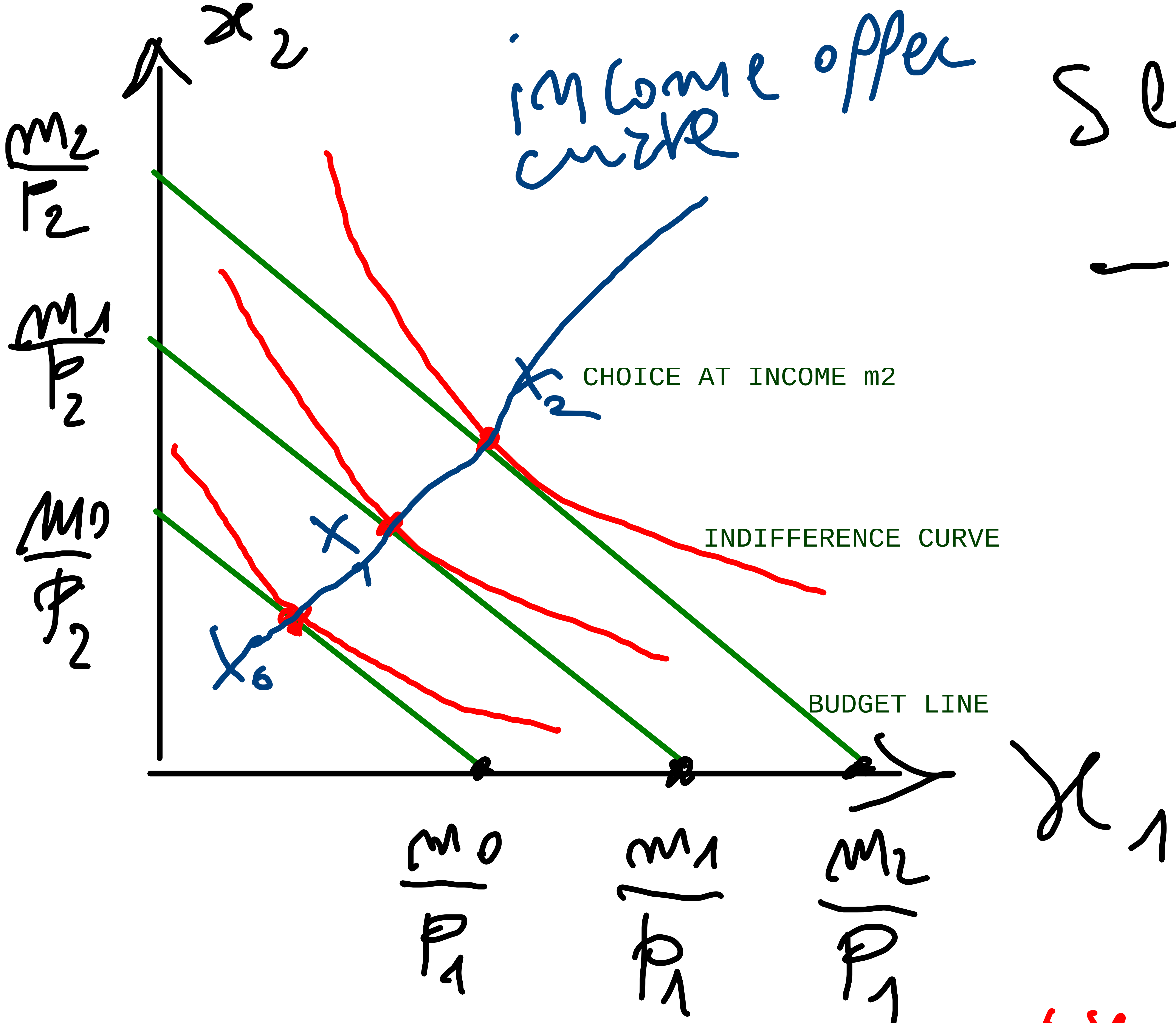
demand for good 1

AS FUNCTION OF INCOME m
HOLDING PRICES FIXED

$x_1(p_1, p_2, m)$

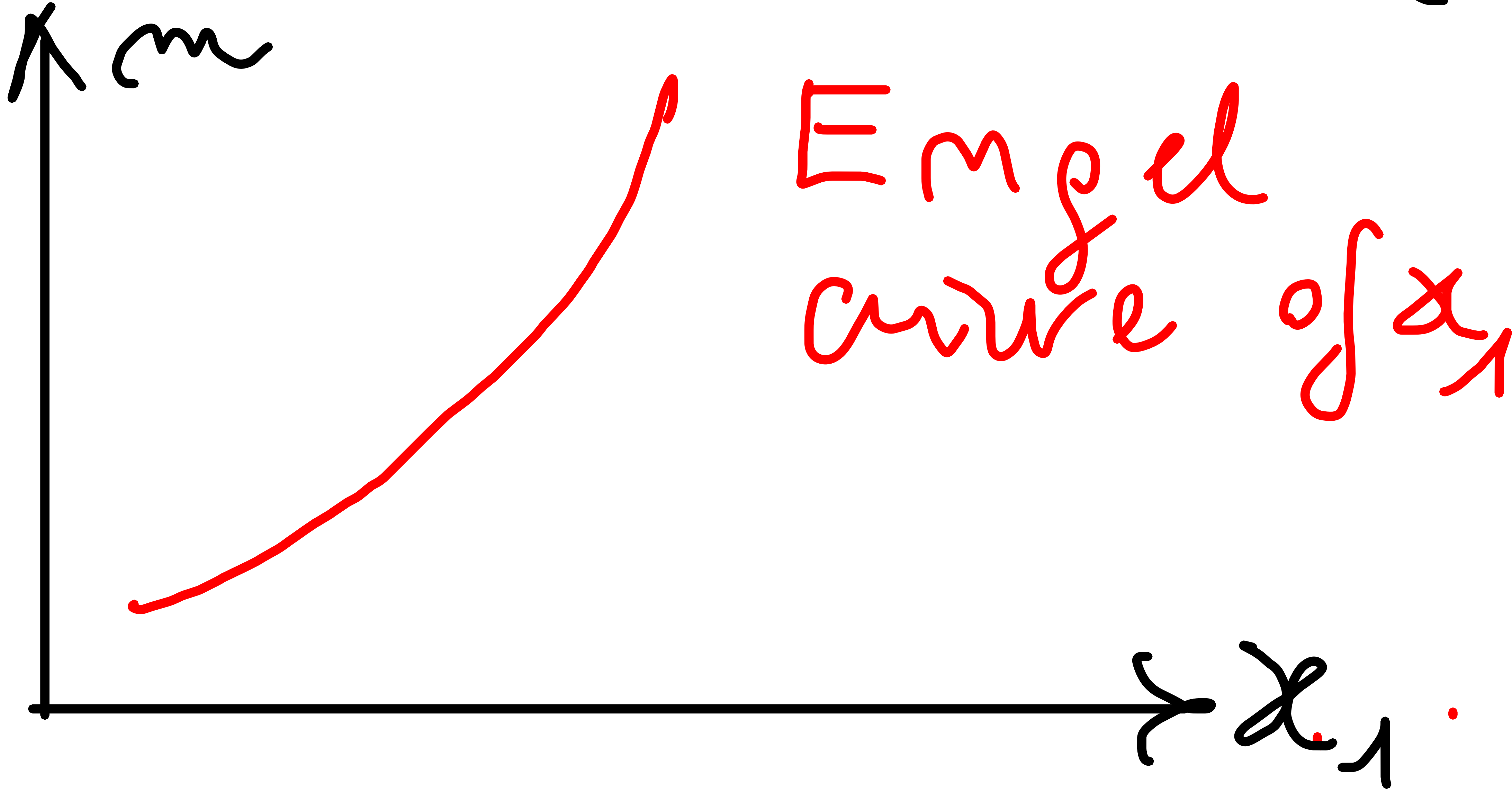
$x_1(p_1, p_2, m')$

'comparative statics'



slope of budget line $-\frac{p_1}{p_2}$ we hold p_1, p_2 fixed

incomes m_0 m_1 m_2



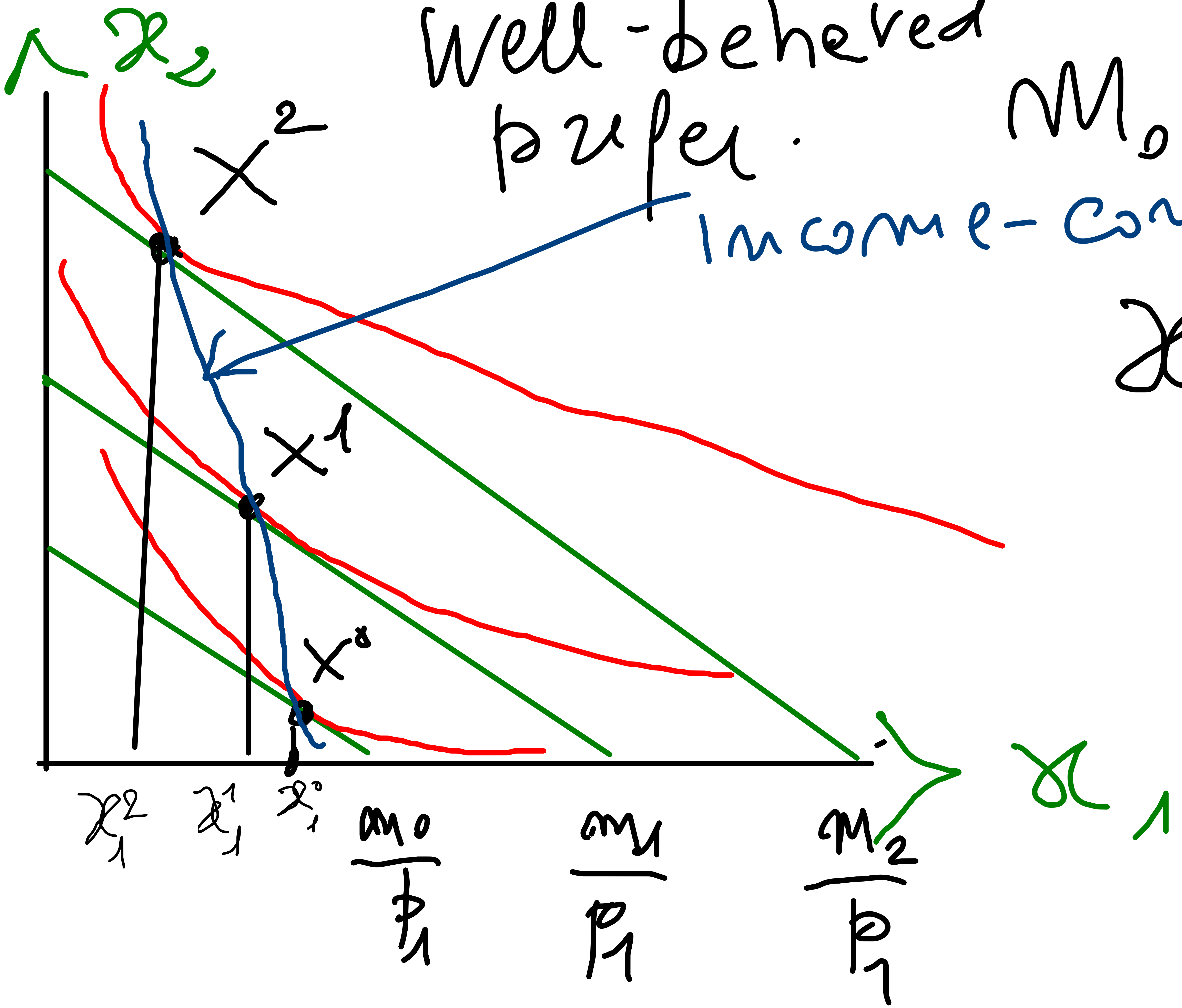
x_1 is normal: $\frac{\Delta x_1}{\Delta m} > 0$

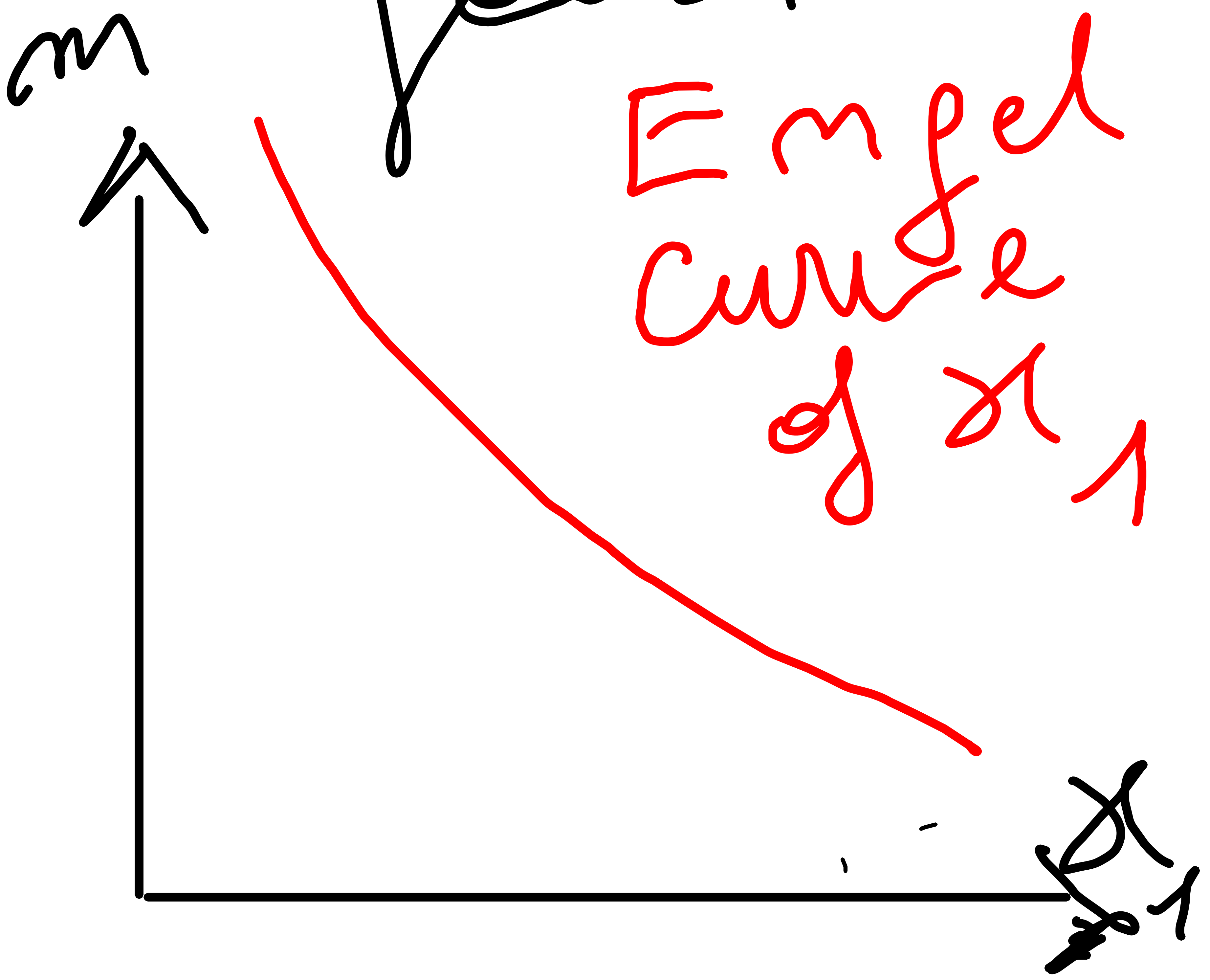
Well-behaved prefer.

$m_0 < m_1 < m_2$

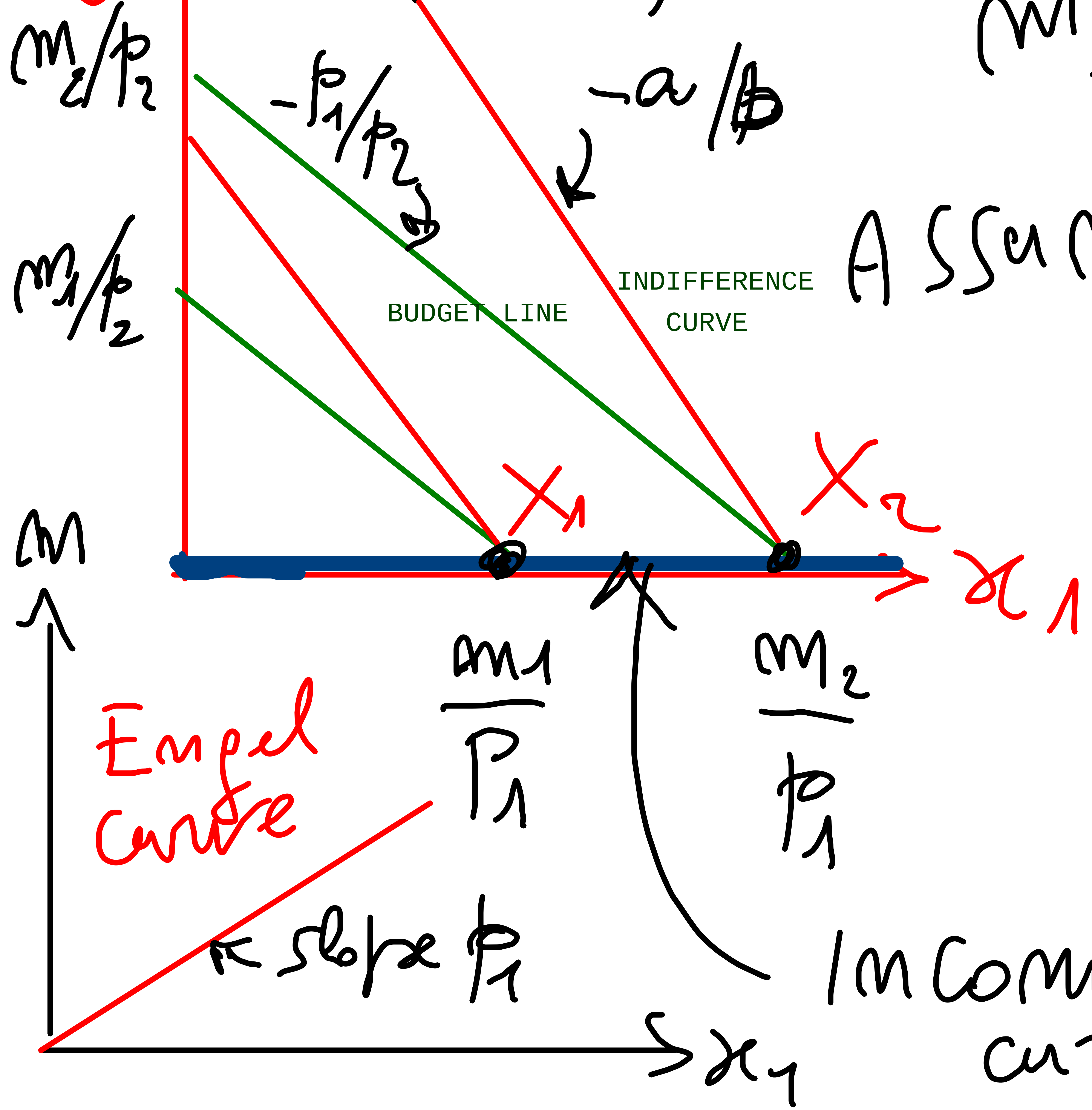
Income-consumption curve

x_1 inferior good





$U(x_1, x_2) = ax_1 + bx_2$ PERFECT SUBTITUTES



$m_1 < m_2$

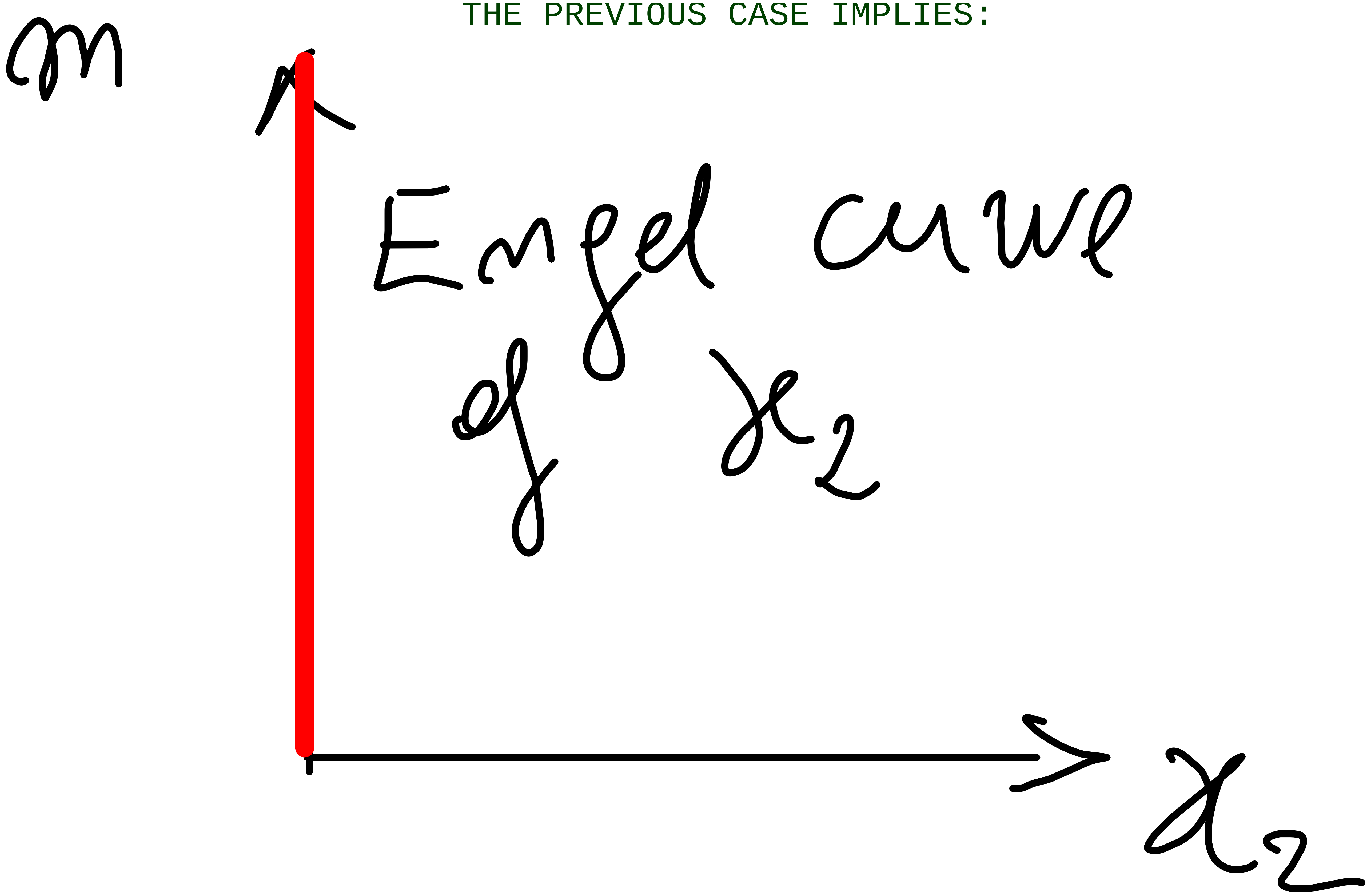
Assume $\frac{MU_1}{MU_2} = \frac{a}{b} > \frac{p_1}{p_2}$

$x_1 = \frac{m}{p_1}$ $x_2 = 0$

$m = x_1 p_1$ Engel equation

Income-consumption curve

THE PREVIOUS CASE IMPLIES:



$$\frac{a}{b} = \frac{MU_1}{MU_2} > \frac{p_1}{p_2}$$

$$x_2 = 0 \quad \forall m$$

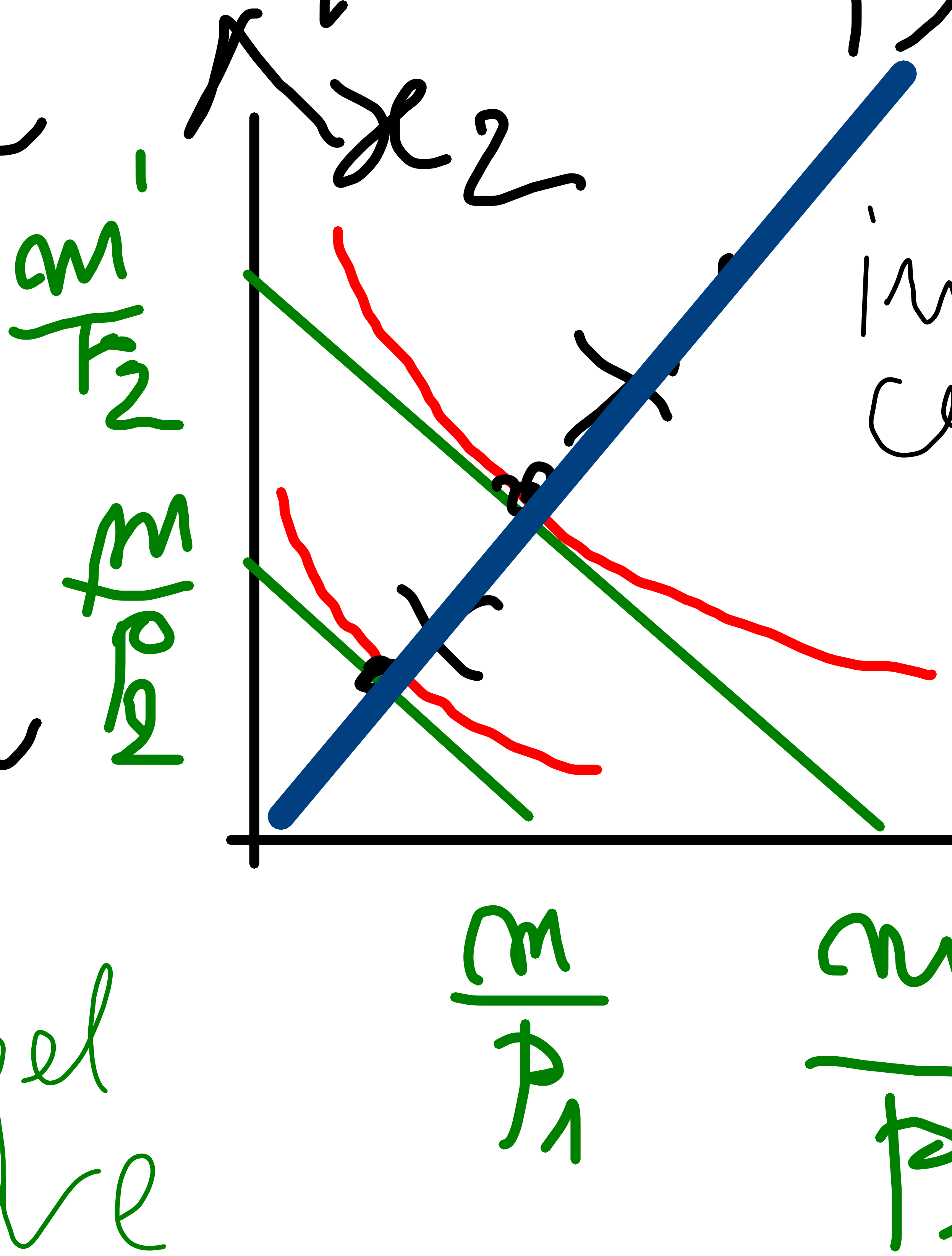
p_1, p_2 are fixed m is changing

$$u(x_1, x_2) = x_1^c \cdot x_2^d \qquad x_1 = \frac{am}{p_1} \qquad x_2 = \frac{(1-a)m}{p_2}$$

COBB-DOUGLAS PREFERENCES

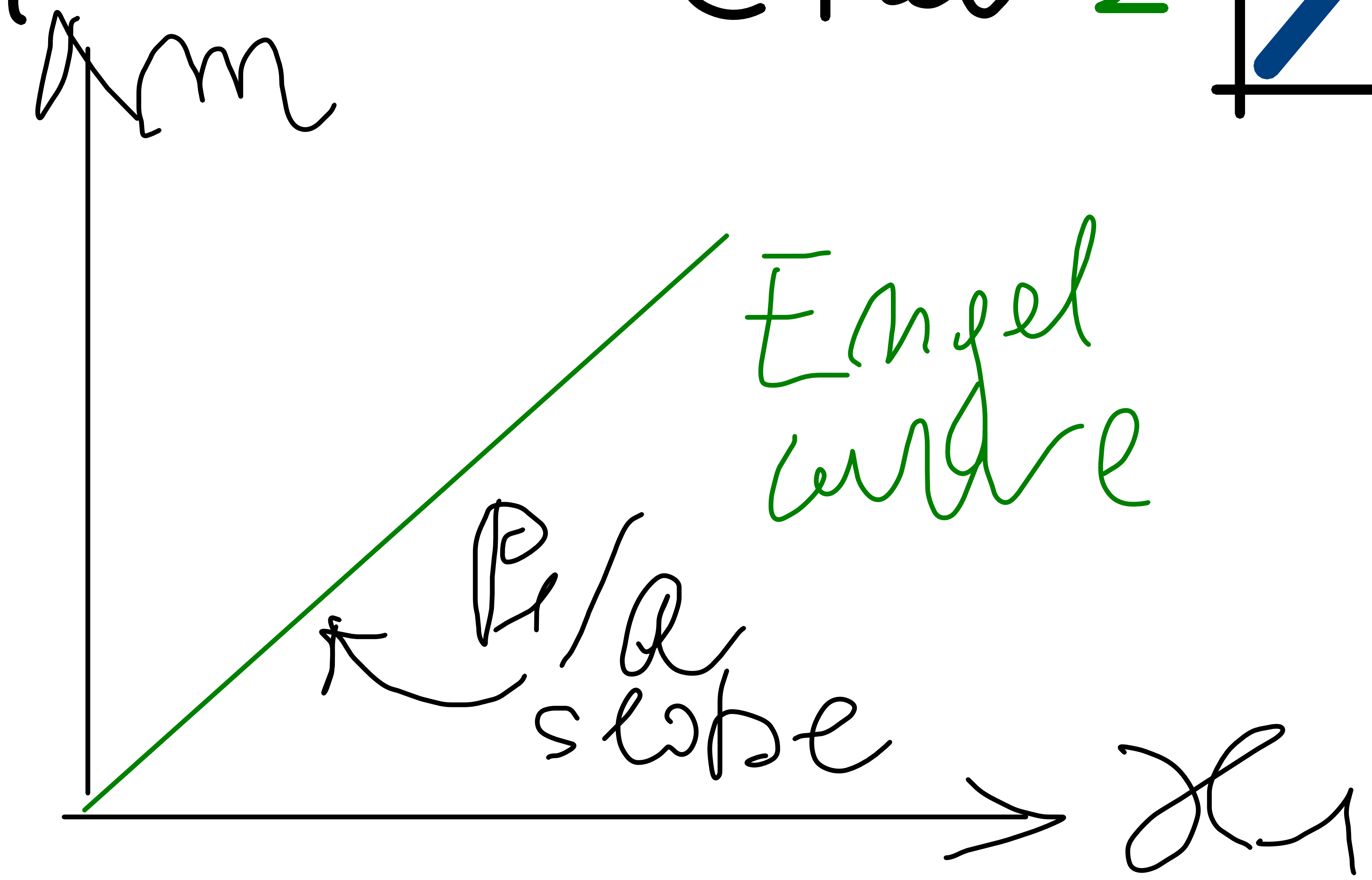
$$v(x_1, x_2) = x_1^a \cdot x_2^{1-a}$$

$$a = \frac{c}{c+d} \qquad 1-a = \frac{d}{c+d}$$



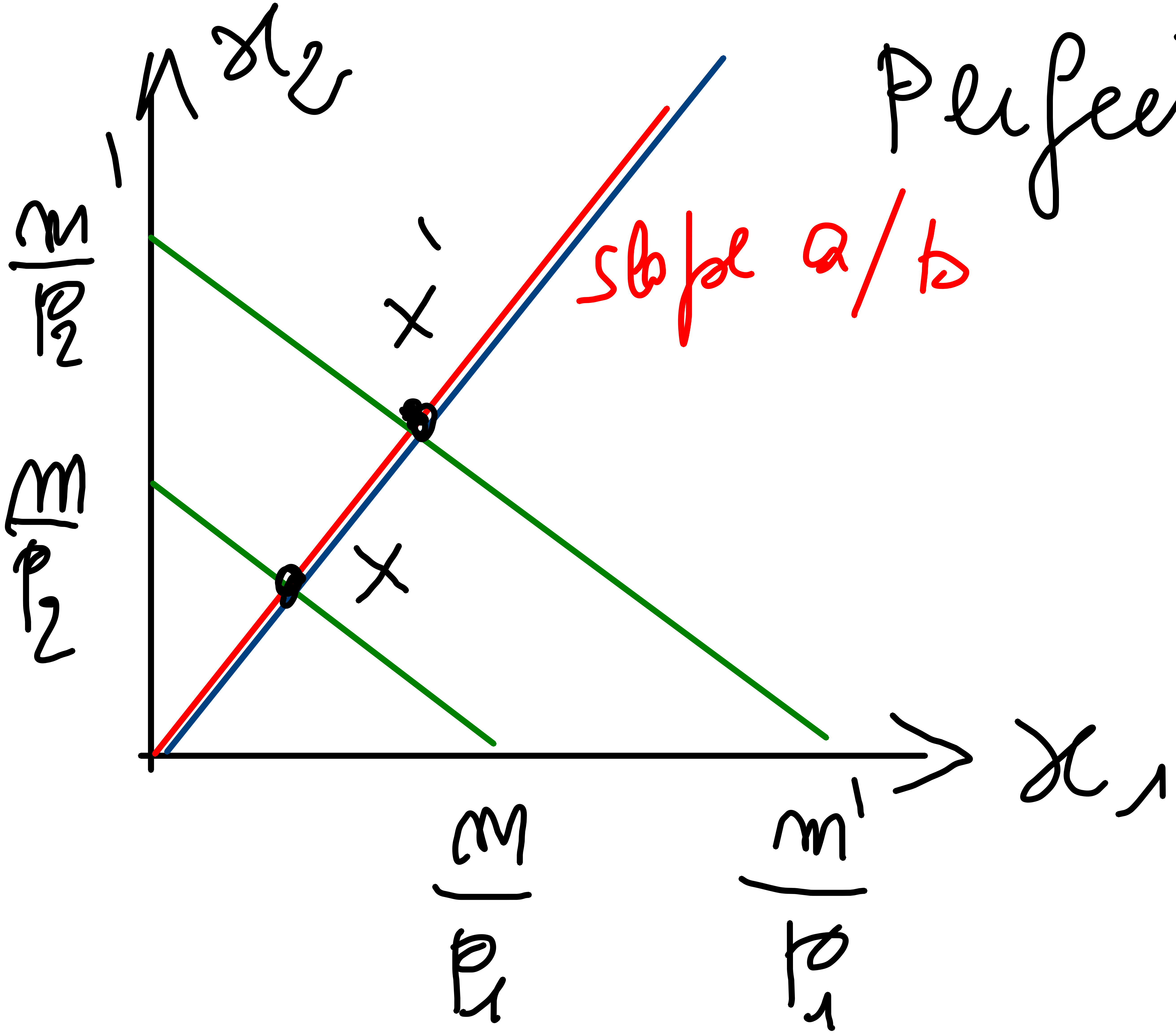
income consump. curve is a straight line

$m < m'$



$$m = \frac{p_1 x_1}{a}.$$

Perfect complements



$$u(x_1, x_2) = \min(a x_1, b x_2)$$

$$\frac{x_2}{x_1} = \frac{a}{b}$$

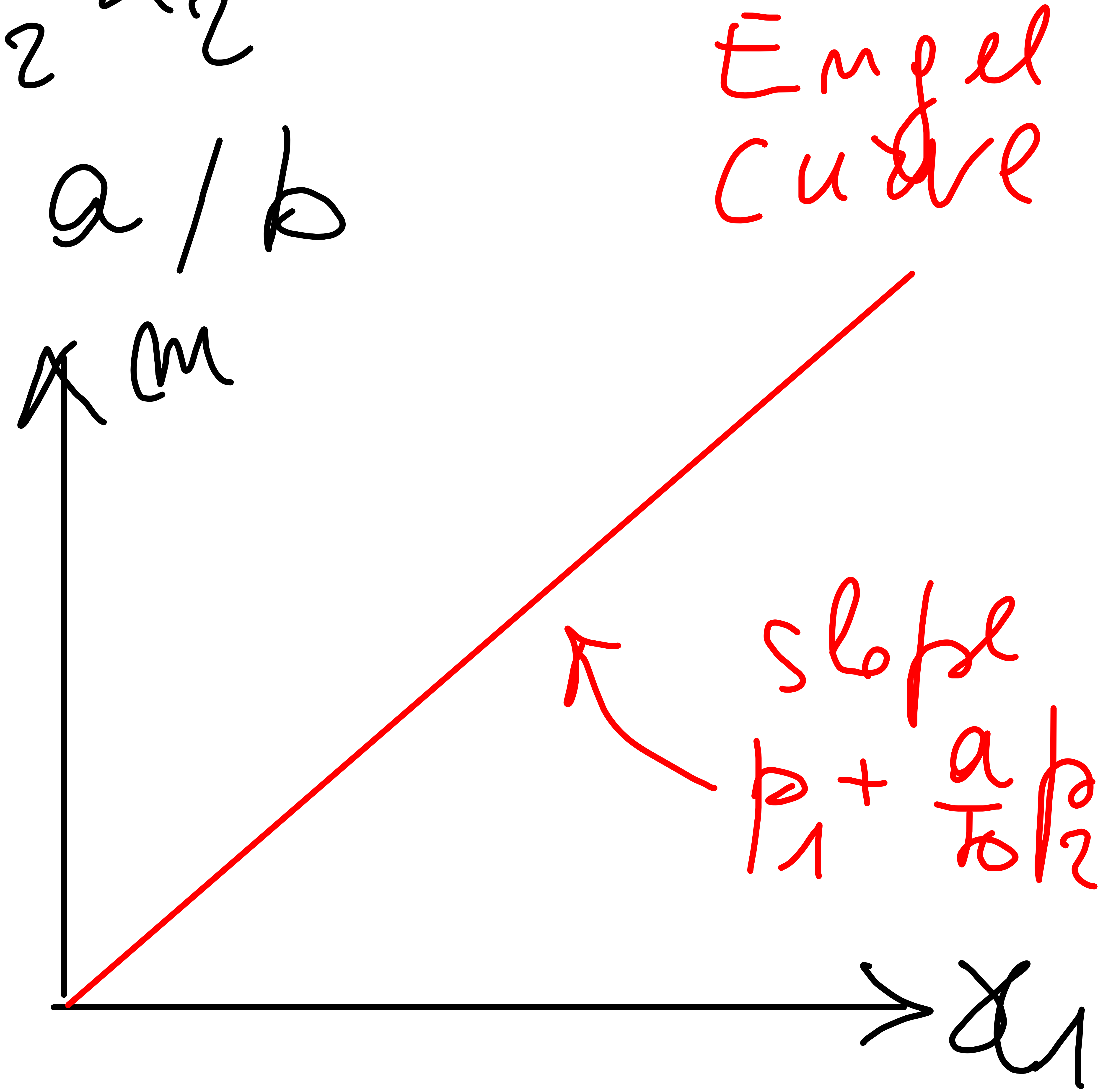
$$x_2 = \frac{a}{b} x_1$$

$m' > m$

$$\begin{cases} p_1 x_1 + p_2 x_2 = m \\ x_2 / x_1 = a/b \end{cases}$$

$$x_1 = \frac{m}{p_1 + \frac{a}{b} p_2}$$

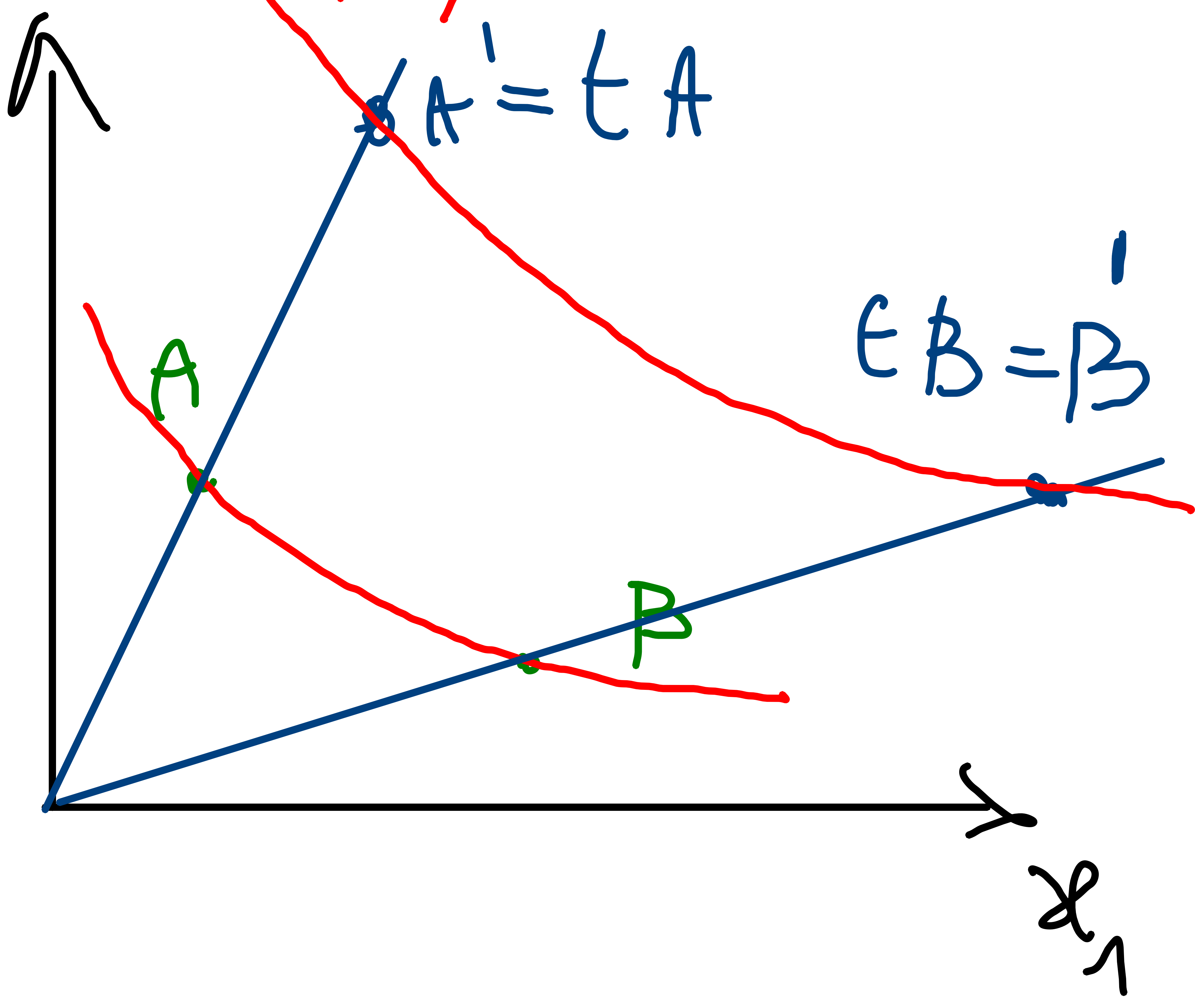
$$m = x_1 \left(p_1 + \frac{a}{b} p_2 \right)$$



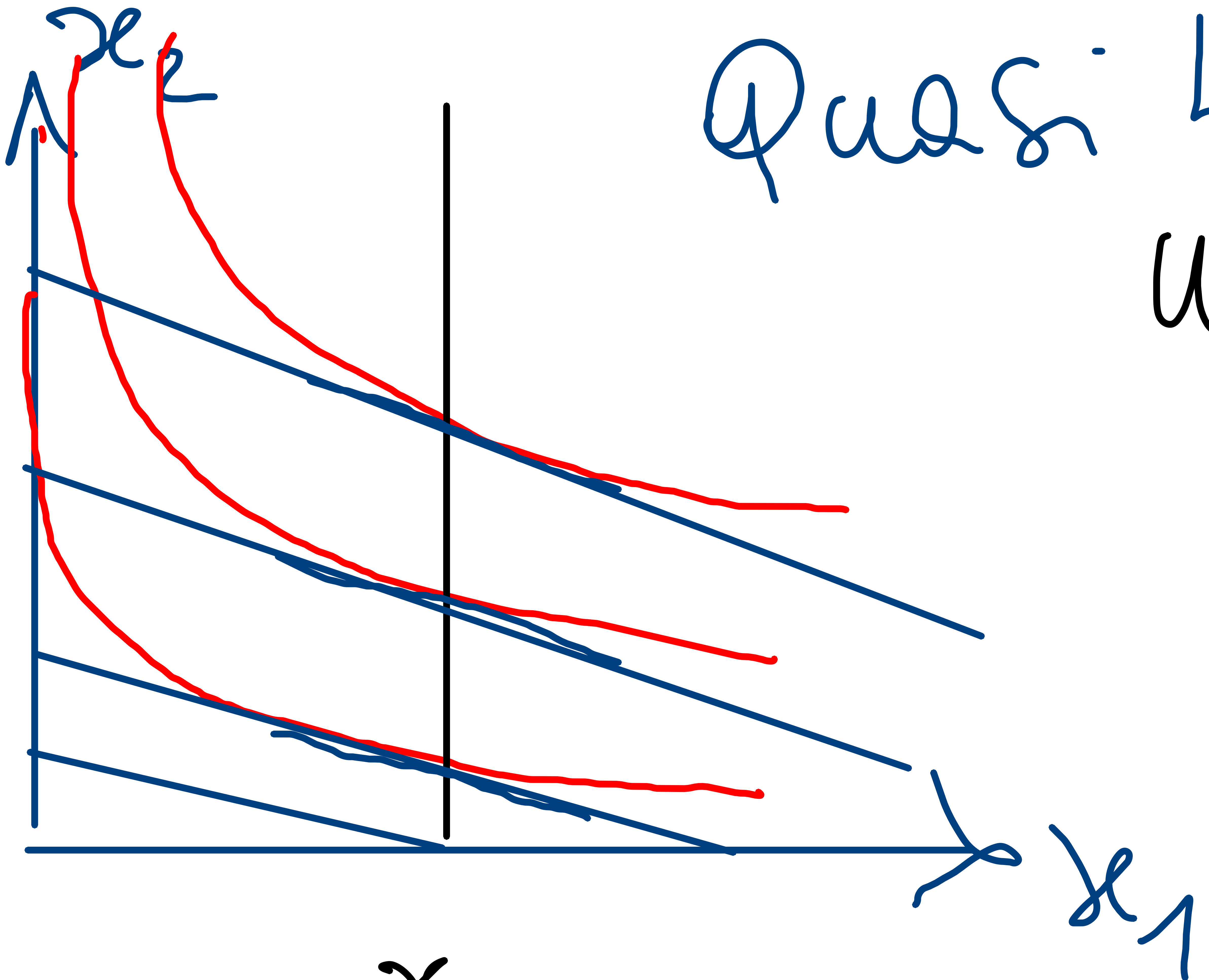
homotetic preferences

if $A \sim B$
then $tA \sim tB$

$A \neq B$



Quasi Linear Preferences



x_1

$$u(x_1, x_2) = \log x_1 + x_2$$

$$MU_1 = 1/x_1$$

$$MU_2 = 1$$

$$|MRS| = \frac{1}{x_1}$$

1st order cond

$$m \geq x_1^* p_1 = p_2$$

$$\frac{1}{x_1} = |MRS| = p_1/p_2$$

$$x_1^* = \frac{p_2}{p_1}$$

if $m < p_2$ $\quad x_1 = \frac{m}{p_1}$

IN THE PREVIOUS EXAMPLE OF QUASI-LINEAR PREFERENCES THE Engel curve of x_1 IS

$$x_1 p_1 = m$$