Matching Wedge

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https://pascalmichaillat.org/c2/

Assumption. Each visit requires $p \in (0,1)$ services

Service purchased
- consumed. C (deliver utility)
- used for matching & conduct visits

Service consumed $\leq$ service purchased

Link between consumption & purchases.

Household conducts v visits & aims to consume C services

service purchased $= C + v \times p$

1 visit $\rightarrow$ $q(x)$ service (in expectation)

1 purchase $\rightarrow$ $1/q(x)$ visits (omit randomness)

$C + v \times p$ purchases $\rightarrow$ require $\frac{C + v \times p}{q(x)}$ visits

$$v = \frac{C}{q(x)} + v \times \frac{p}{q(x)}$$

$$v\left(1 - \frac{p}{q(x)}\right) = \frac{C}{q(x)}$$

$$v = C * \frac{1}{q(x) - \rho}$$

Service required for matching

$$\rho \times v = C * \frac{\rho}{q(x) - \rho}$$

Service required for matching & consuming 1 service

$$\tau(x) \equiv \frac{\rho}{q(x) - \rho}$$

$\tau(x)$ is the matching wedge

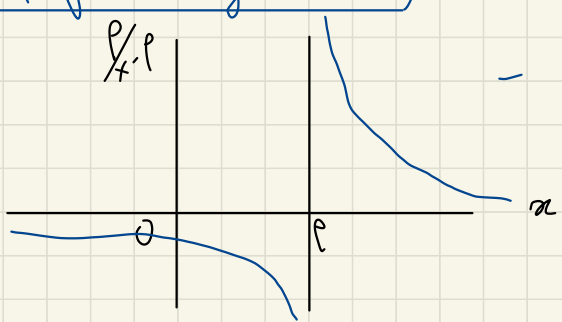
To consume 1 service, household purchases

$1 + \tau(x)$ services

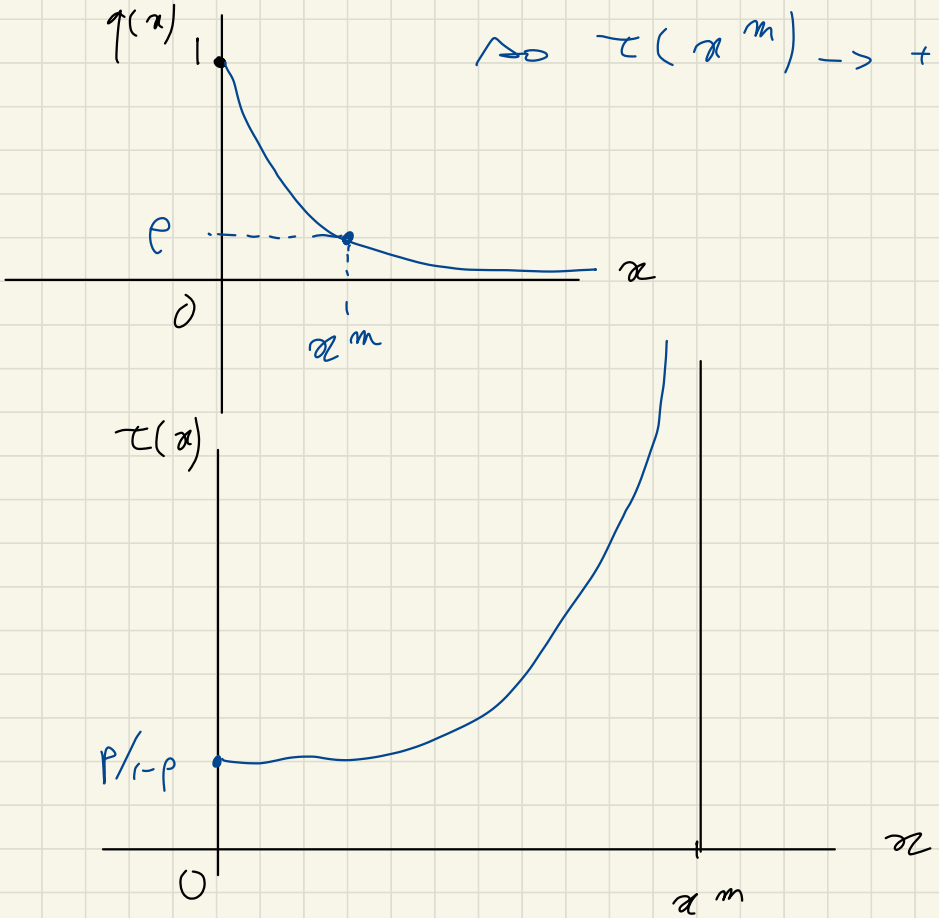
1 ← consumption

$\tau(x)$ ← matching

Properties of $\tau(x)$



- $\tau(0) = \rho/(1-\rho)$
- $\tau(x)$ increasing in x (b/c $\rho/(x-\rho)$ is ↓)
- $\tau(x) \to +\infty$ when $q(x) = \rho$



$\Rightarrow \tau(x^m) \to +\infty$

When the market is tighter, units are less likely to be successful, so the household must devote more services to matching → the matching wedge is larger, it is more costly to consume things