WA I

If $x, y \in B, B'$ and $x \in C(B)$, $y \in C(B')$, then $x \in C(B')$.

$\succsim$ on X

a continuous utility representation

$\succsim$ C & t, continuous

$\succsim$ strictly increasing

$\succsim$ strictly convex

(X is a convex set)

Q is non-empty

u conti.

V is continuous. (well-defined)

Q is uppersemicon.

Q is usc & q is conti

Q is single-valued. $\Rightarrow$ WA II holds

$Q(p,w) = \{q(p,w)\}$

If $p^1 q^0 \leq w^1$, $p^0 q^1 > w^0$

WA II = CD (stronger) $\rightarrow$ given $w^1 = p^1 q^0$, $(p^1 - p^0)(q^1 - q^0) \leq 0$. w/ < when $q^1 \neq q^0$

u strictly quasi concave $\rightarrow$ Q contains at most one element.

V is strictly inc. in w

u LNS $\rightarrow$ Walras' law $px = w$

x^* is optimal

$\Leftrightarrow py \geq px^* = w$, $\forall y \succsim x^*$

(budget hyperplane supports $\{\succsim x^*\}$ at x^*, $px^* = w$ and $py \geq w$, $\forall y \succsim x^*$)

· $\succsim \Rightarrow u$

$\succsim$ C & t on a finite X

$\succsim$ C & t on a countably infinite X

or

$\succsim$ C & t, conti. on a uncountably infinite X

($\Rightarrow$ continuous u)

· $C \Rightarrow \succsim$

If $C(\cdot)$ satisfies WA and $C(B)$ is non-empty,

$C(\cdot)$ is rationalizable & unique $\succsim$ c & t.

$(C(\cdot) = C_{\succsim}(\cdot))$