A.2. (*Perfect Competition*). (T, τ, μ) is a finite atomless measure space.

A.3. $X(t) = E_+$ for all $t \in T$.

A.4. (*Resource Availability*). The aggregate initial endowment $\int_T e(t)\,\mathrm{d}\mu(t)$ is strictly positive,[4] i.e., $\int e \gg 0$.

A.5. (*Continuity*). For each $x \in E_+$ the set $\{y \in E_+ : y >_t x\}$ is norm open in E_+ for all $t \in T$.

A.6. $>_t$ is irreflexive and transitive for all $t \in T$.

A.7. (*Measurability*). The set $\{(t, y) \in T \times E_+ : y >_t x\}$ belongs to $\tau \otimes \beta(E_+)$.

A.8. (*Monotonicity*). If $x \in E_+$ and $v \in E_+ \setminus \{0\}$, then $x + v >_t x$ for all $t \in T$.

We are now ready to state our first result. We wish to note that this result for $E = C(X)$ [where $C(X)$ denotes the space of continuous functions on a compact metric space X] was first proved by Gabszewicz, and it is attributed to him.

Theorem 4.1. *Under assumptions* A.1–A.8, $C(\varepsilon) = W(\varepsilon)$.

Remark 4.1. Note that the assumptions of the above theorem correspond to those in Aumann (1964) in the setting of an ordered separable Banach space E of commodities. It can easily be seen that for $E = R^l$, Theorem 4.1 gives as a corollary Aumann's (1964) core equivalence result [as well as Hildenbrand's (1974, Theorem 1, p. 133) core–Walras equivalence theorem]. It may be instructive at this point to note that Bewley's (1973) infinite dimensional extension of Aumann's core equivalence theorem does not provide the above results as a corollary because it is based on stronger assumptions than those adopted by Aumann and Hildenbrand.

4.1. Proof of Theorem 4.1

The fact that $W(\varepsilon) \subset C(\varepsilon)$ is well known, and therefore its proof is not repeated here. We begin the proof by assuming that the allocation x is an element of the core of ε. We wish to show that for some price p, the pair (x, p) is a competitive equilibrium for ε.

To this end, define the correspondence $\phi: T \to 2^{E_+}$ by

[4]We will say that an element x of E is *strictly positive* (and write $x \gg 0$) if $\Pi \cdot x > 0$ whenever Π is a positive non-zero element of E_+.