

$F$  of  $L=L_\infty$  which contain the initial endowments. Standard results imply that each of the economies  $\mathcal{E}^F$  has an equilibrium  $(x_1^F, \dots, x_N^F; p^F)$  with  $p^F \in F'$ . Since Bewley assumes that preferences are monotone, it is necessarily the case that  $p^F \geq 0$  and there is no loss of generality in assuming that  $\|p^F\|=1$ . Since  $e$  is strictly positive, it is in fact an interior point of the positive cone of  $L=L_\infty$ . The Krein–Rutman Theorem then allows us to extend  $p^F$  to an element  $\pi^F$  of  $L'=L'_\infty$  with  $\pi^F \geq 0$  and  $\|\pi^F\|=1$ . The net of equilibria  $(x_1^F, \dots, x_N^F; \pi^F)$  has a subnet which converges (in the respective weak-star topologies) to  $(\bar{x}_1, \dots, \bar{x}_N; \bar{\pi})$ . Since the functionals  $\pi^F$  are positive and have norm 1, non-emptiness of the interior of the positive cone implies that the (weak-star) limit functional  $\bar{\pi}$  is also positive and also has norm 1. In particular,  $\bar{\pi}$  is not the zero functional. It now follows that  $(\bar{x}_1, \dots, \bar{x}_N; \bar{\pi})$  is an equilibrium for  $\mathcal{E}$ .

This argument depends crucially *both* on the assumption that preferences are monotone *and* on the assumption that the positive cone of the Banach lattice  $L$  has a non-empty interior; it will not work if *either* of these assumptions is dropped. The problem is that we must be sure that the limit price  $\bar{\pi}$  is not identically zero. If preferences are not monotone, we cannot be sure that the prices  $p^F$  (and hence their extensions  $\pi^F$ ) are positive. Since the functionals  $\pi^F$  only converge to  $\bar{\pi}$  in the weak-star topology, however, there is then no reason to suppose that  $\bar{\pi}$  is not identically zero. (This can happen in the dual of *any* infinite-dimensional Banach space, including  $L_\infty$ .) On the other hand if the positive cone of  $L$  has an empty interior, then the limit functional  $\bar{\pi}$  may again be zero – even if all the functionals  $\pi^F$  are positive and have norm 1.

The purpose of this discussion is to point out that the crucial issue is to guarantee that the limit functional  $\bar{\pi}$  is not identically zero. The central idea of our proof is to consider, not finite-dimensional subspaces of  $L$ , but rather finite-dimensional vector sublattices. For vector sublattices, we can use the extremely desirable commodities  $v_i$  to obtain an estimate (which we call the Price Lemma, and isolate in section 5) which will, in the limit, guarantee that  $\bar{\pi}$  is not identically zero. However, this approach creates a multitude of its own difficulties. The first difficulty is that, in general, a Banach lattice need not have ‘enough’ finite-dimensional vector sublattices; we take care of this in section 6 by showing that the existence of a compatible topology implies the existence of ‘many’ finite-dimensional vector sublattices. The second difficulty is that, even with an abundance of finite-dimensional vector sublattices, we cannot be sure of finding *any* finite dimensional vector sublattices which contain the initial endowments; we take care of this by constructing economies in the finite-dimensional vector sublattices which are approximations of the original economy, rather than restrictions of it. The third difficulty is that the family of finite-dimensional vector sublattices is not directed by inclusion; we take care of this by directing them by ‘approximate