

1983-84 (Florida Department of Citrus).<sup>6</sup> Fresh citrus is exported through Ft. Pierce, Jacksonville, Port Canaveral, Port Everglades, and Tampa, all in Florida. The 1979-80 sales share for each port is assumed to extend through the 1983-84 marketing season (Florida Department of Agriculture and Consumer Services, p. 35).<sup>7</sup>

## ASSEMBLY, DISTRIBUTION, AND PACKING COSTS

The distribution costs from Indian River packinghouses to the five North American cities are determined by averaging actual quoted rates for oranges and grapefruit from November 1979 through May 1980 (U.S. Department of Agriculture).<sup>8</sup> The distribution cost (*DC*) in dollars per box from a packinghouse to a port is assumed to be a function of one way mileage (*OWM*) ( $DC = 0.2049 + 0.0041 OWM$ : updated Machado, p. 100, to 1979-80 dollars).<sup>9</sup> The bulk hauling cost for citrus from groves to the packinghouses and the cost of hauling eliminations from packinghouses to a processing plant is assumed to be \$0.00727 per box mile, one way (calculated from Hooks and Kilmer, 1981b, p. 7).<sup>10</sup>

The capacities of existing packinghouses are not available. In order to establish the maximum annual packing capacity, the 1979-80 volume packed by each packinghouse is used as a base. The 1979-80 base is used because the annual boxes packed in Florida during the 1979-80 season was 36,439,588 boxes which represents the second largest volume packed during the 1957-58 through 1981-82 seasons (Florida Department of Agriculture and Consumer Services, 1981-82, p. 17). Thus the 1979-80 volume is assumed to be an acceptable proxy for capacity.

Houses are permitted to increase the 1979-80 volume packed by twenty percent to allow for use of unused capacity. It was found that during the 1973-74 through the 1975-76 seasons, 29 Florida packinghouses (packing 43 percent of the total fresh fruit shipments in 1975-76) had an average capacity utilization of 50 percent (Kilmer and Tilley, p.

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<sup>6</sup>See footnote 3.

<sup>7</sup>See footnote 3, item b.

<sup>8</sup>Toronto, Canada, is estimated by taking the rate to New York times 1.19.

<sup>9</sup>Machado based his original equation on quoted rates for shipping fruit to a port. Machado's results are updated to 1979-80 dollars by using an index based on Florida retail diesel fuel prices.

<sup>10</sup>The bulk hauling cost per box mile is determined by using a per box cost estimate from Hooks and Kilmer (1981b, p. 7) and dividing by an estimate of 30 miles for the average length of haul from grove to packinghouse. Industry sources indicate that 30 miles was realistic. Also, Bowman et al. (p. 42) found that hauling distances varied from 5 to 55 miles, which contains the 30-mile estimate.