The demand curve

As stated in the text, the basic determinants of market demand for a specific good such as *Good 1* are (1) consumers' tastes and preferences, which we can denote by *Z*; (2) the number of consumers in the market, *N*; (3) consumers' money incomes, *I*; (4) the prices of related goods, P_2, P_3, and so on; and expectations (*E*).

Consider a typical consumer, which we will denote with the superscript "*i*." This individual purchases some quantity of the good, Q_1 (and amounts of all other goods), which gives her the greatest satisfaction. This amount will of course vary, depending on the price of good 1, the prices of all other goods, her income, and her preferences. We can write this relationship: $Q_1^i = f^i(P_1, P_2, P_3, \ldots, I^i, Z^i, E^i)$. This individual's demand curve for good 1 is found by holding constant the value of all variables other than the price of good 1 and graphing the resulting relationship between Q_1^i and P_1. This relationship is typically written $Q_1^i = f^i(P_1 | P_2, P_3, \ldots, I^i, Z^i, E^i)$.

There are *N* consumers, each of whom has similar demands for good 1. The market demand for this good is simply the sum of all of the quantities demanded by the *N* consumers at each possible price: $Q_1 = \sum_{i=1}^{N} Q_1^i = \sum_{i=1}^{N} f^i(P_1 | P_2, P_3 \ldots, I^i, Z^i, E^i)$. For simplicity, this can be written more compactly as $Q_1 = F_1(P_1 | P_2, I, Z, E, N)$.

Written in this form, the function clearly shows that the market demand for a good is a relationship between the quantity demanded of a good and its price, holding constant the prices of all other goods, consumers' incomes, consumers' preferences, and the number of consumers. A change in any of the factors previously held constant will result in a different relationship between Q_1 and P_1. We would call this new relationship a change demand.