**Composition Rule:**
$$\frac{\{P\}\ S_1\ \{Q\},\ \{Q\}\ S_2\ \{R\}}{\{P\}\ S_1;\ S_2\ \{R\}}$$

**If Statement Rule:**
$$\frac{\{P \wedge B\}\ S\ \{Q\},\ (P \wedge \neg B) \Rightarrow Q}{\{P\}\ \texttt{if}\ (B)\ S;\ \{Q\}}$$

**While Statement Rule:**
$$\frac{\{I \wedge B\}\ S\ \{I\}}{\{I\}\ \texttt{while}(B)\ S;\ \{I \wedge \neg B\}}$$

**Rule of Consequence:**
$$\frac{P' \Rightarrow P,\ \{P\}\ S\ \{Q\},\ Q \Rightarrow Q'}{\{P'\}\ S\ \{Q'\}}$$

**Figure 2.3** Inference rules in programming logic *PL*.