$$h(1,0,1,u) = F^{-1}_{Y_1(1,0)|D=1,M=0}(F_{U|10}(u)). \tag{1}$$

Second, for $F_{Y_0(1,0)|D=0,M=0}(y)$ we have

$$F^{-1}_{U|10}(F_{Y_0(1,0)|D=1,M=0}(y)) = h^{-1}(1,0,0;y), \tag{2}$$

using (). Combining () and () yields,

$$h(1,0,1,h^{-1}(1,0,0;y)) = F^{-1}_{Y_1(1,0)|D=1,M=0} \circ F_{Y_0(1,0)|D=1,M=0}(y). \tag{3}$$

The left sides of () and () are equal. In contrast to (), () contains only distributions that can be identified from observable data. In particular, $F_{Y_t(1,0)|D=1,M=0}(y) = \Pr(Y_t(1,0) \leq y|D = 1, M = 0) = \Pr(Y_t \leq y|D = 1, M = 0)$. Accordingly, we can identify $F^{-1}_{Y_1(1,0)|D=0,M=0} \circ F_{Y_0(1,0)|D=0,M=0}(y)$ by $Q_{10}(y) \equiv F^{-1}_{Y_1|D=1,M=0} \circ F_{Y_0|D=1,M=0}(y)$. Parsing Y_0 through $Q_{10}(\cdot)$ in the non-treated group without mediator gives

$$\begin{aligned}
& E[Q_{10}(Y_0)|D=0,M=0] \\
&= E[F^{-1}_{Y_1|D=1,M=0} \circ F_{Y_0|D=1,M=0}(Y_0)|D=0,M=0], \\
&= E[F^{-1}_{Y_1(1,0)|D=1,M=0} \circ F_{Y_0(1,0)|D=1,M=0}(Y_0(0,0))|D=0,M=0], \\
&\overset{A1,A3a}{=} E[h(1,0,1,h^{-1}(1,0,0;Y_0(0,0)))|D=0,M=0], \\
&\overset{A2}{=} E[h(1,0,1,h^{-1}(1,0,0;Y_0(1,0)))|D=1,M=0], \\
&\overset{A1,A3b}{=} E[F^{-1}_{Y_1(1,0)|D=0,M=0} \circ F_{Y_0(1,0)|D=0,M=0}(Y_0(1,0))|D=0,M=0], \\
&= E[Y_1(1,0)|D=0,M=0] = E[Y_1(1,0)|D=0,M(0)=0],
\end{aligned} \tag{4}$$

which has data support because of Assumption 4b.