This set of slides is an addendum to Lecture slides #10. It discusses the short-run effects of an increase in $G$ (holding $T$ fixed) on the interest rate $i$ and investment $I$.

Remember from Prof. Jaynes' part of the course (p. 5 of his Lecture slides #10 and p. 8 of his Lecture slides #12), that real money demand depends on both $Y$ and $i$:

$$\frac{M_d}{P} = kY - Zi$$

\[ \downarrow \]

Warning! this is NOT the same $\tau$ as in our theory of aggregate supply.
Let's simplify things and suppose that $M^d/p$ depends only on $c$: $\frac{M^d}{p} = \bar{M} - \bar{c}i$. This is analogous to our assumption that $I$ depends only on $c$ (in reality, it also depends positively on the amount of aggregate economic activity, $Y$).

Equilibrium in the money market requires $M^d = M^s$: nominal money demand = nominal money supply.

So if $p$ rises, $M^d$ rises too, so that $i$ must rise to bring $M^d$ back into equality with $M^s$. The increase in $i$ reduces $I$, in turn reducing $Y$. This is why the AD curve slopes down!
• Now consider the effects of an increase in G. The AD curve shifts out, increasing P and Y. Because P increases, the real money supply \( M^s/p \) decreases, implying that the interest rate must increase in order to reduce real money demand \( M^d/p \) and bring it back into equality with real money supply \( M^s/p \). The increase in \( i \) reduces investment. So, in the short run, the increase in G raises Y, P, i, and C (because disposable income increases) and lowers I.

• In the long run, as discussed in detail in Lecture Slides #10, the increase in G raises P and i, leaves C and Y unchanged, and lowers I.