Lecture 16: The Neoclassical Model II

ECON 30020: Intermediate Macroeconomics

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Readings

GLS Ch. 18 and 19

Equilibrium Conditions

$$C_t = C^d(Y_t - G_t, Y_{t+1} - G_{t+1}, r_t)$$

$$N_t = N^s(w_t, \theta_t)$$

$$N_t = N^d(w_t, A_t, K_t)$$

$$I_t = I^d(r_t, A_{t+1}, f_t, K_t)$$

$$Y_t = A_t F(K_t, N_t)$$

$$Y_t = C_t + I_t + G_t$$

$$M_t = P_t M^d(i_t, Y_t)$$

$$r_t = i_t - \pi^e_{t+1}$$

Bringing it All Together

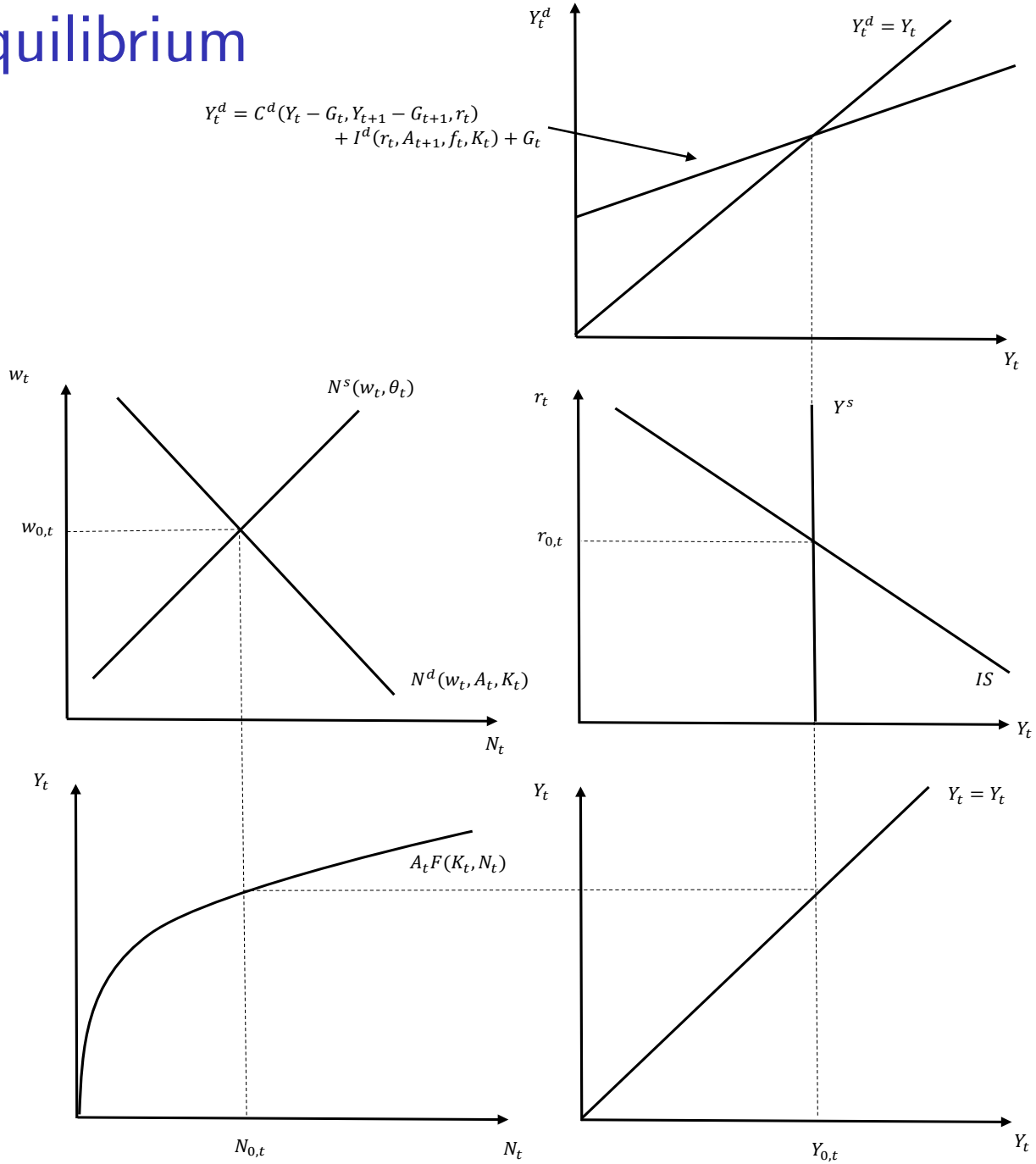
In general equilibrium, economy must be on both the IS and Y^s curves

- Labor market clearing: Y^s curve
- Goods market / financial market clearing: IS curve

Intersection jointly determines Y_t, r_t, N_t, and w_t

Figure out split between C_t and I_t, given Y_t and r_t, by looking at consumption and investment demand functions

General Equilibrium



Effects of Changes in Exogenous Variables

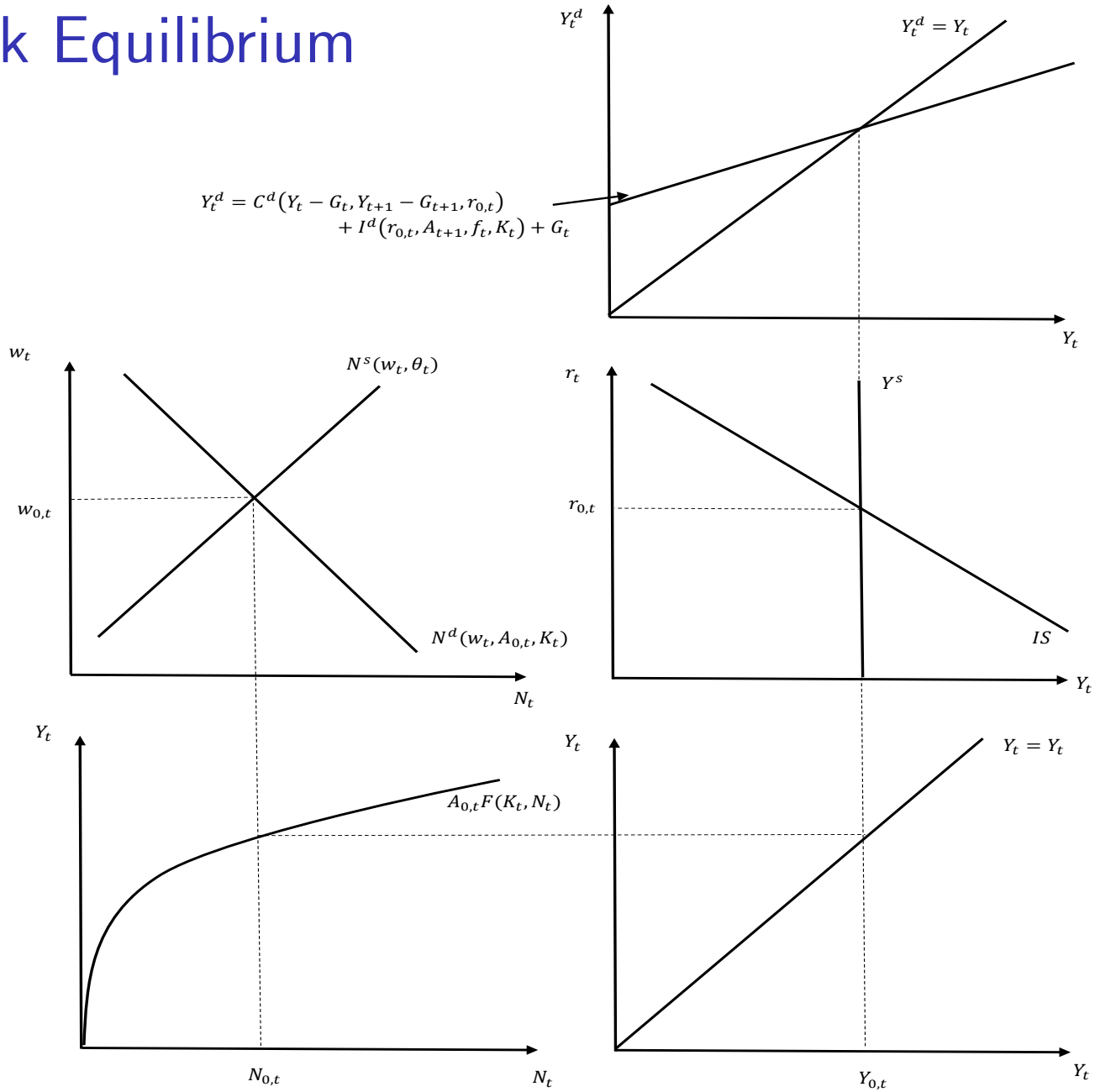
A_t, θ_t, and K_t affect the position of the Y^s curve

A_{t+1}, f_t, G_t, G_{t+1}, and K_t affect the IS curve

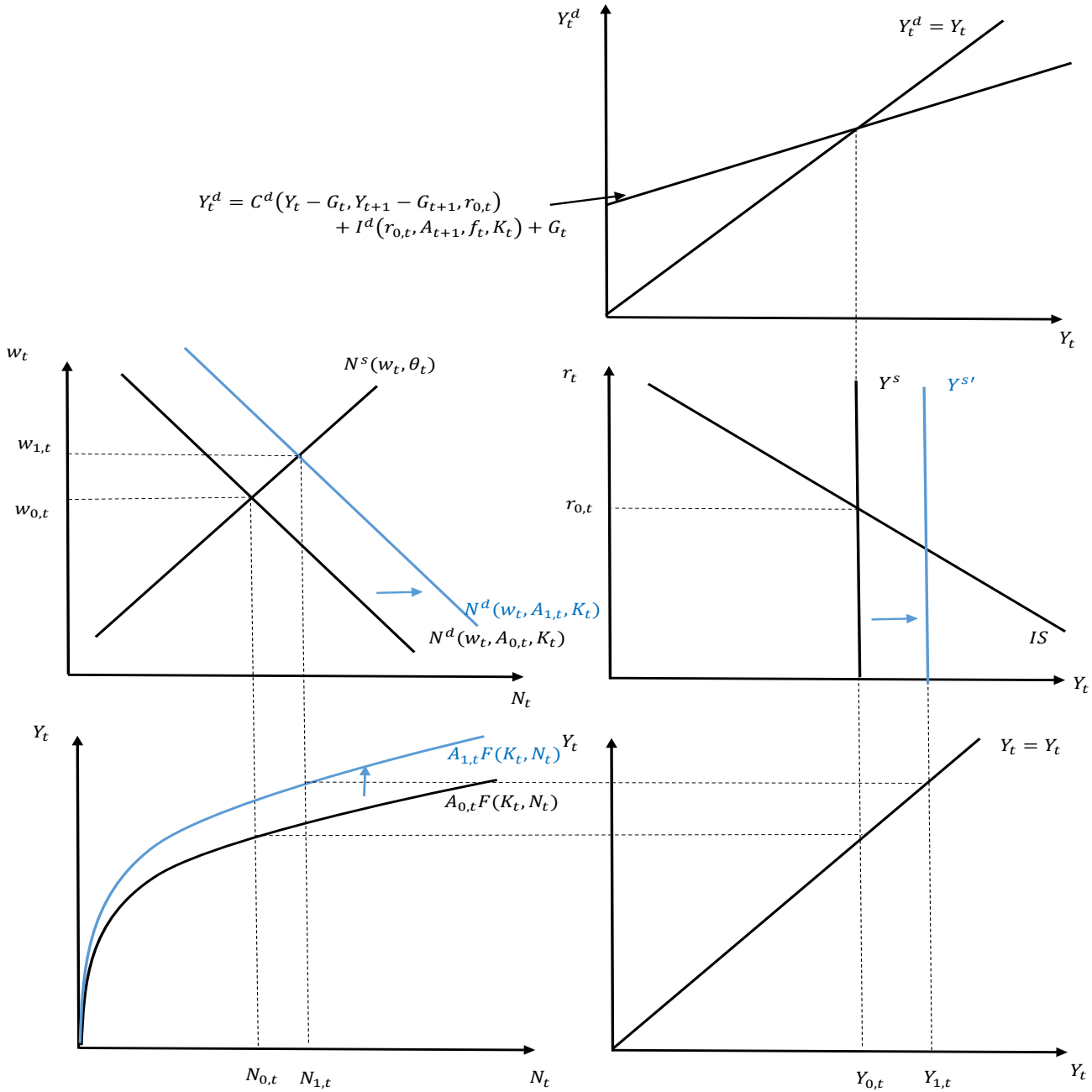
Figure out how Y^s and IS curve shift, determine new r_t. Use this to figure out how other endogenous variables react

We ignore endogenous propagation from I_t to K_{t+1}. Treat Y_{t+1} as pseudo-exogenous.

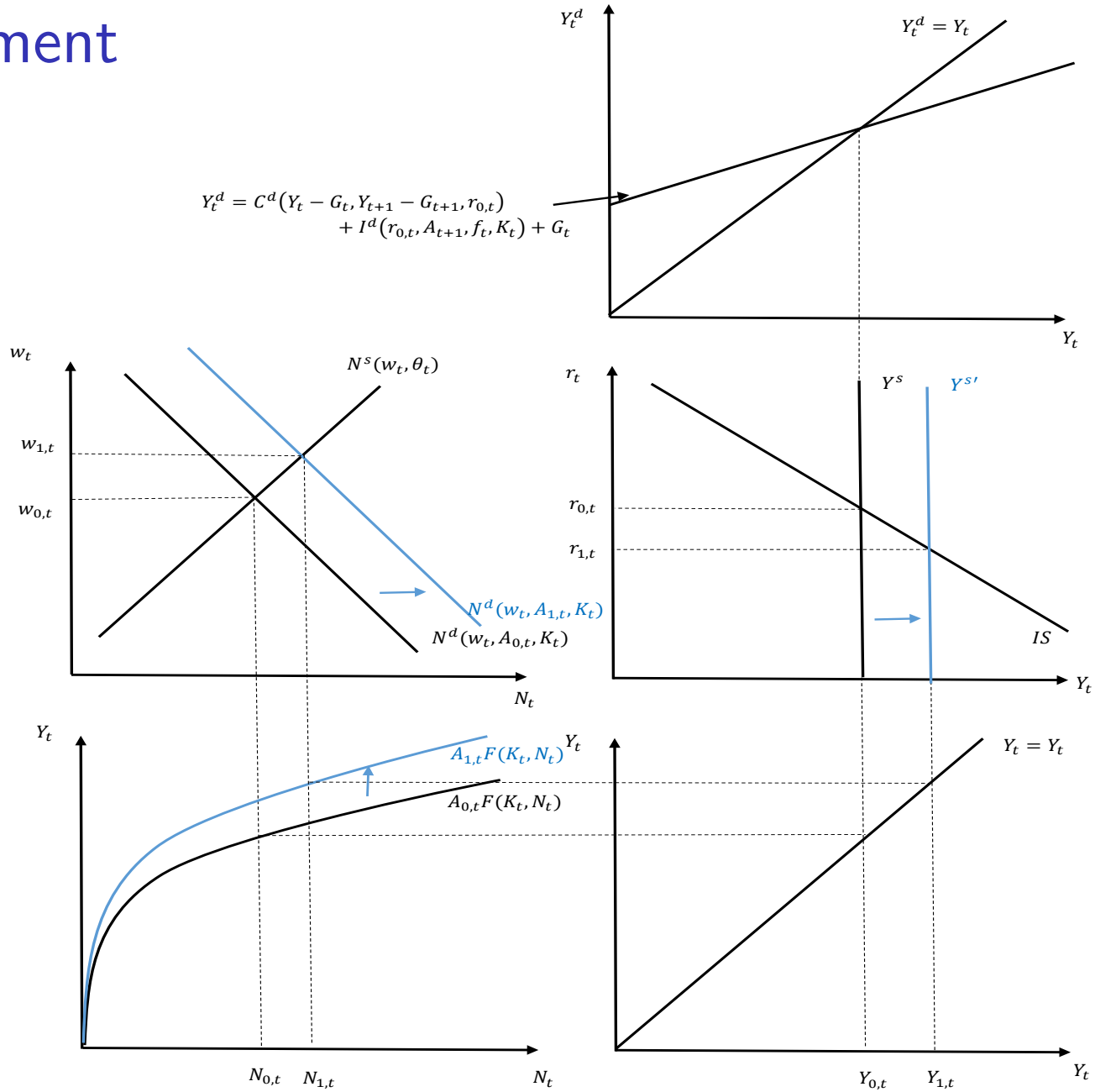
Supply Shock: $\uparrow A_t$, Pre-Shock Equilibrium



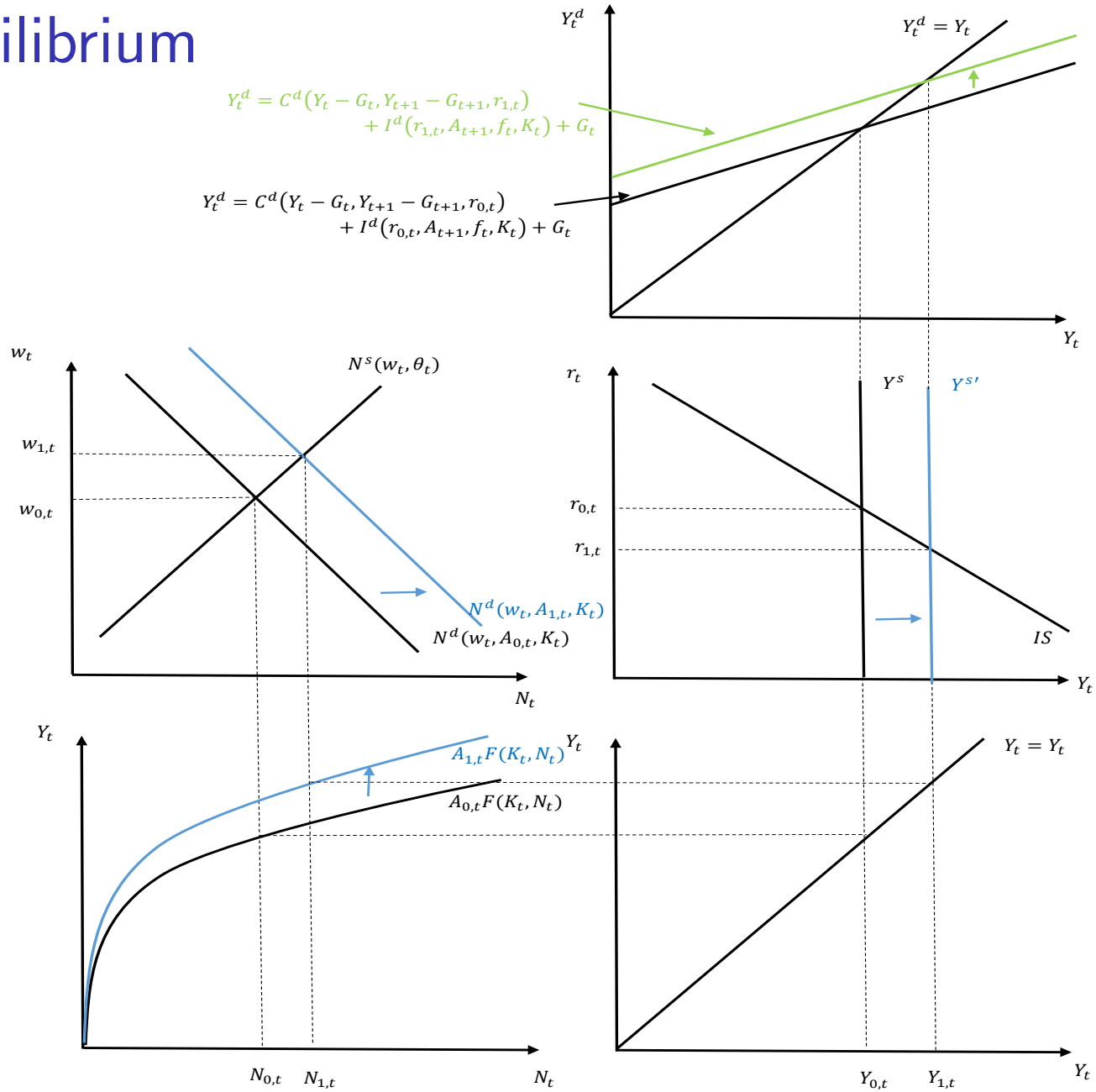
Supply Shock: $\uparrow A_t$
Y^s Shift



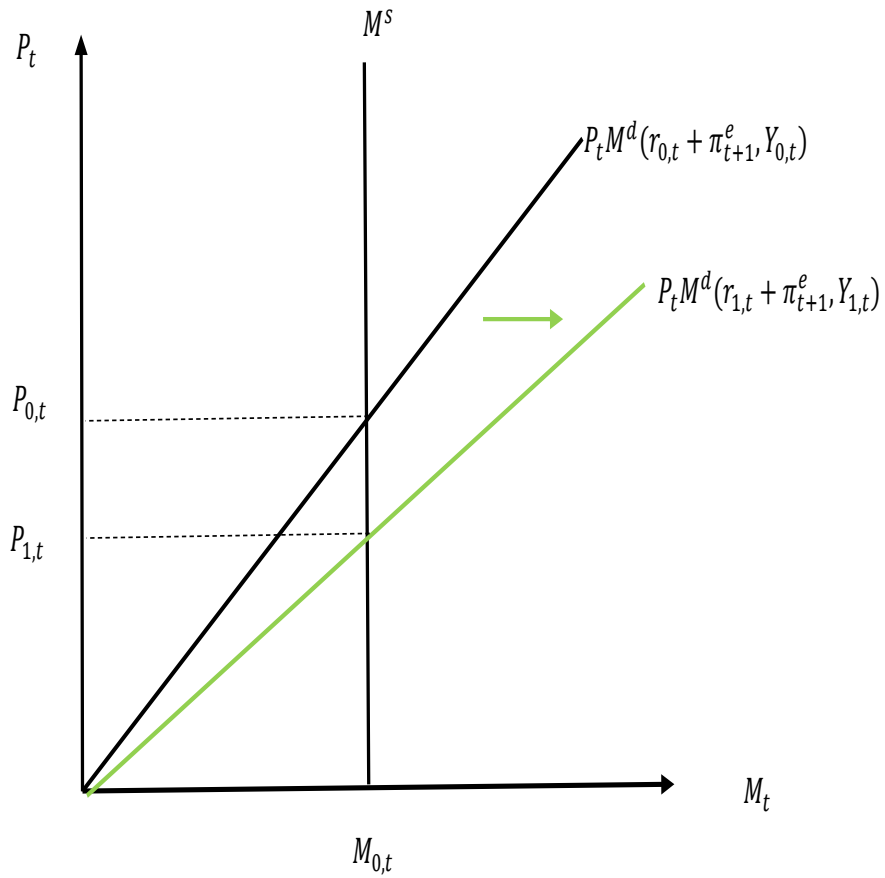
Supply Shock: $\uparrow A_t$
r_t adjustment



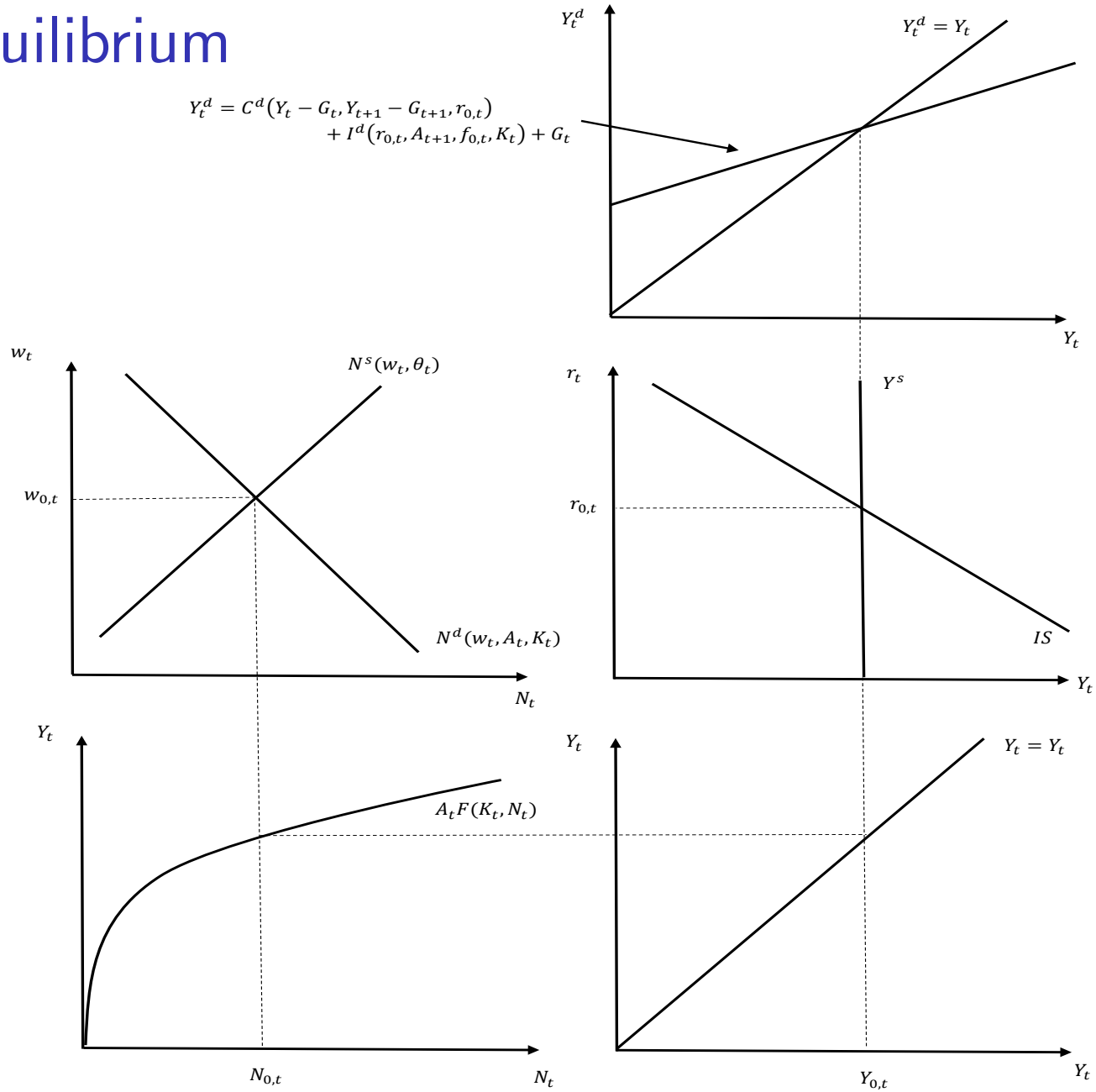
Supply Shock: $\uparrow A_t$
New Equilibrium



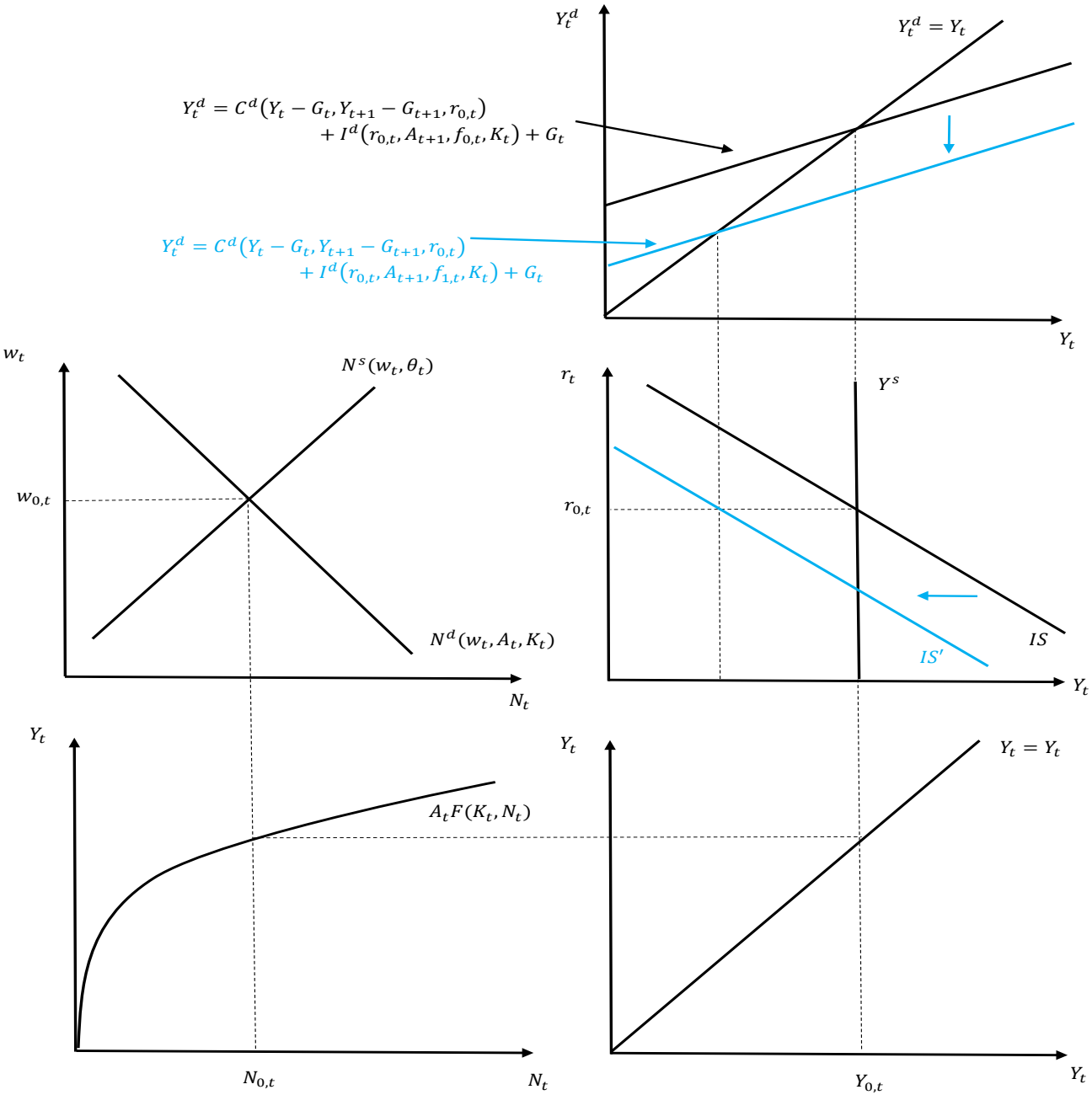
Supply Shock: $\uparrow A_t$
Nominal Impact



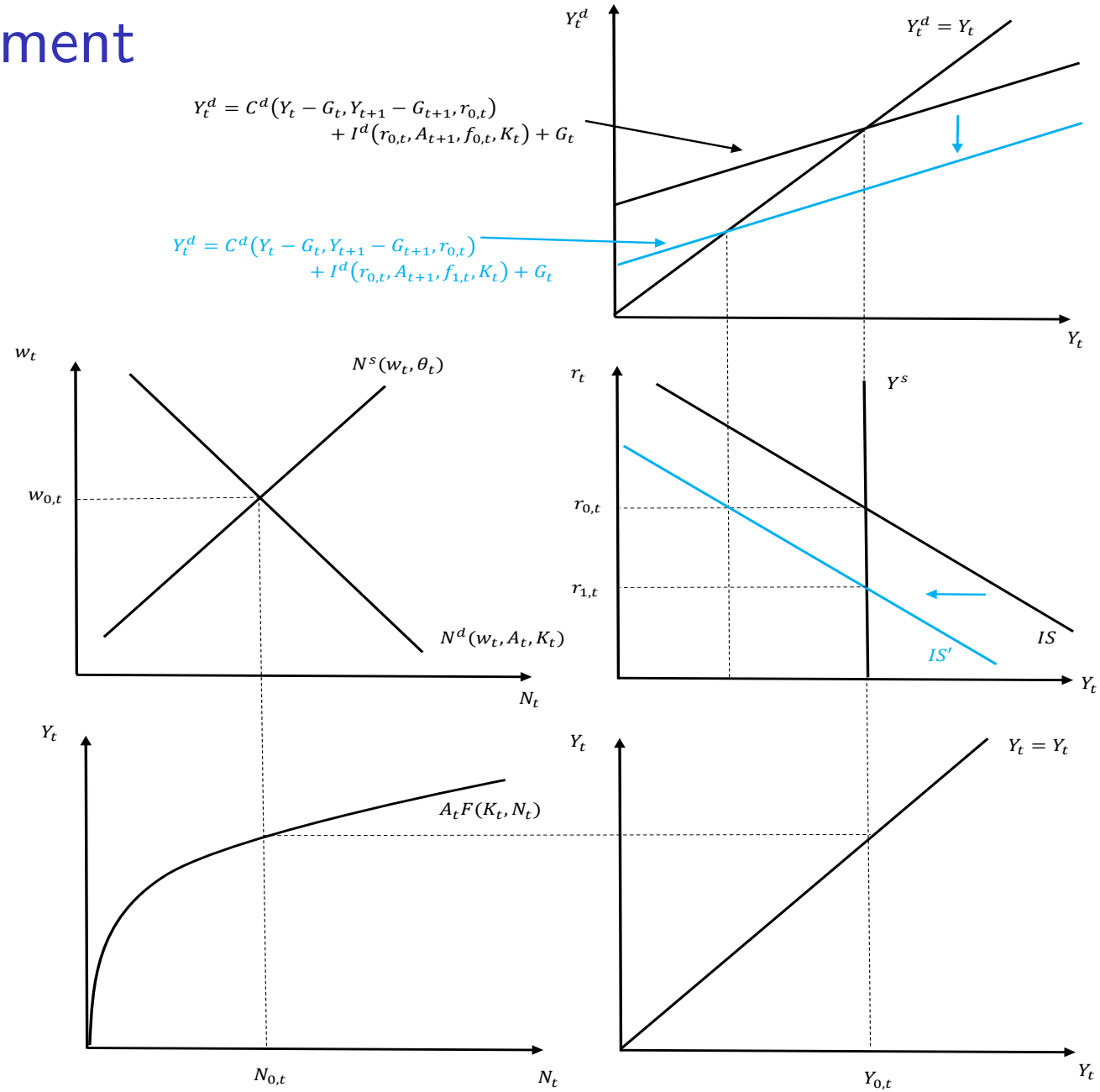
Demand Shock: $\uparrow f_t$
Initial Equilibrium



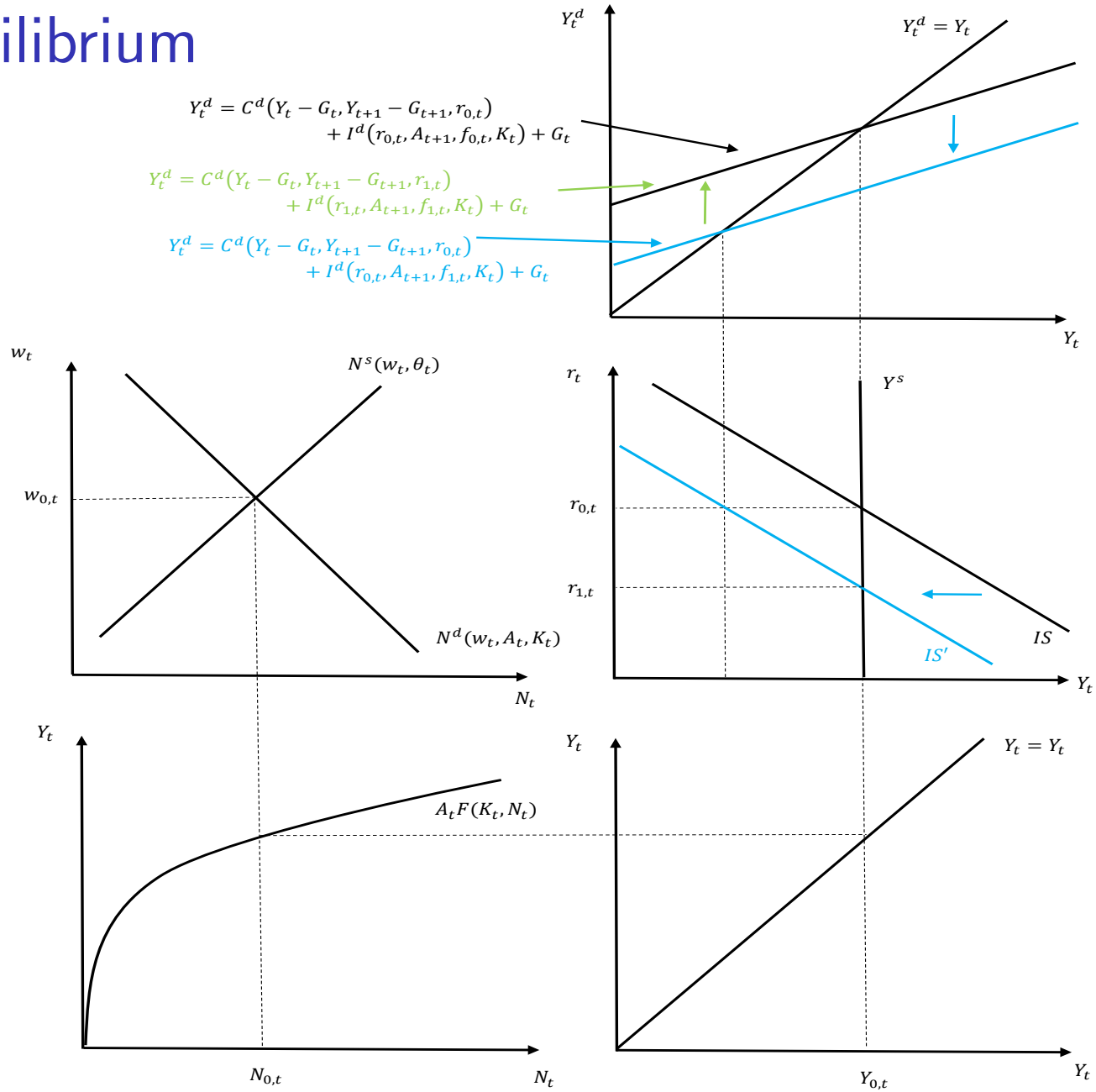
Demand Shock: $\uparrow f_t$
IS Shift



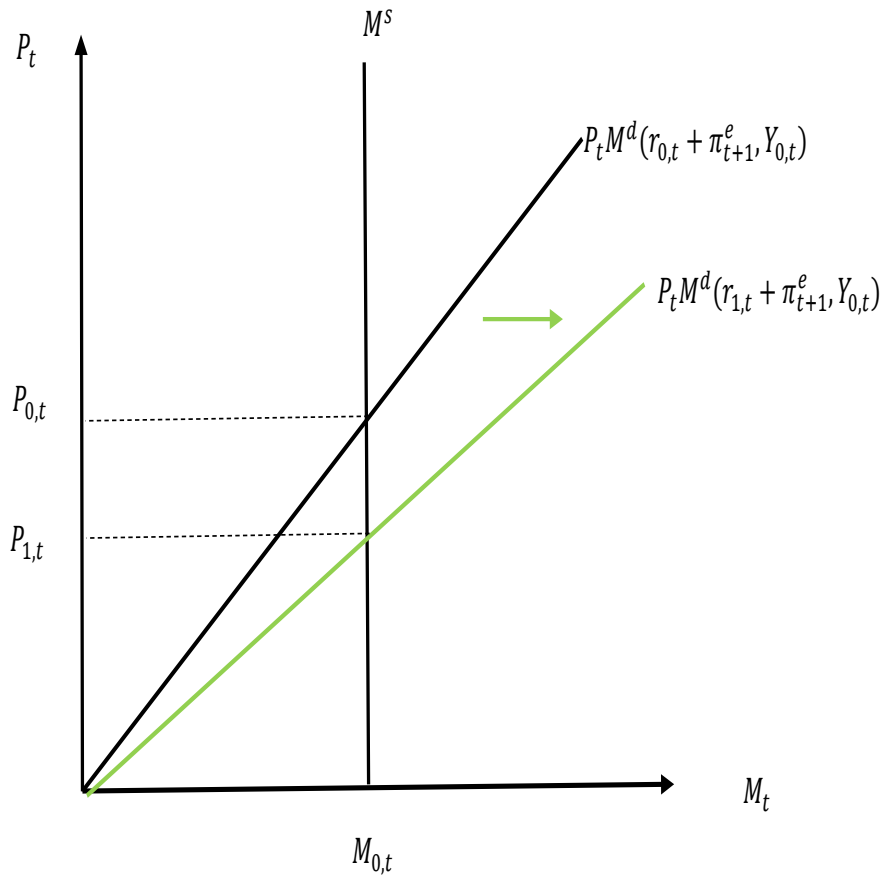
Demand Shock: $\uparrow f_t$
r_t Adjustment



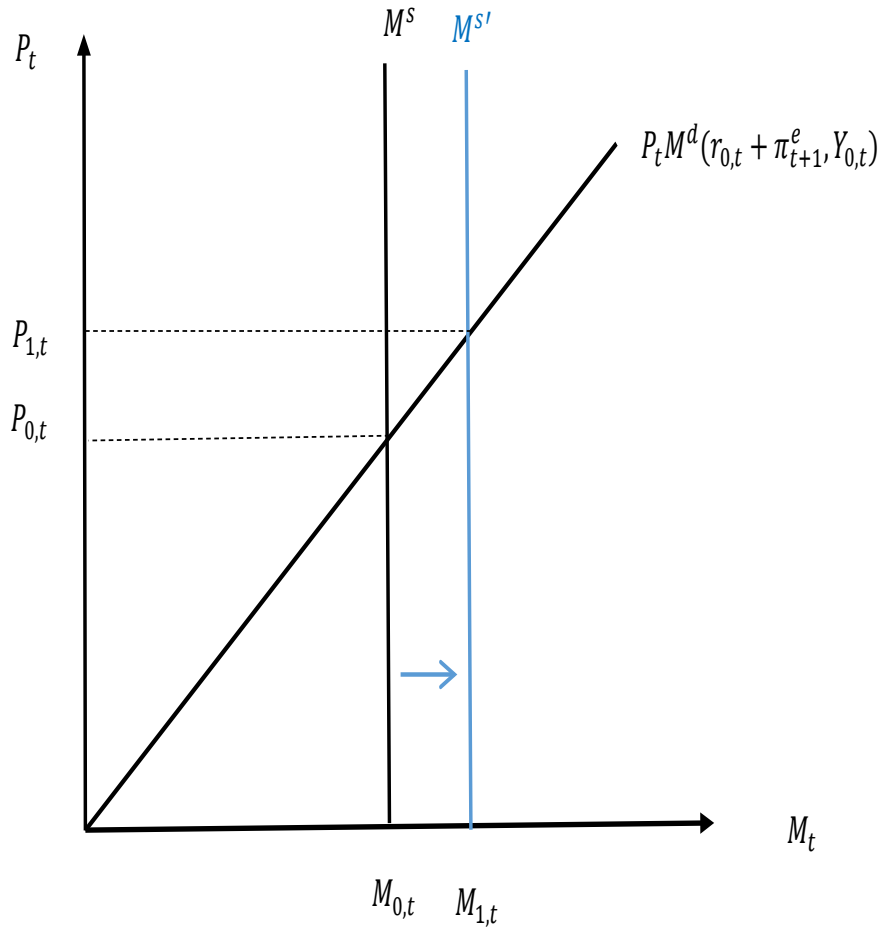
Demand Shock: $\uparrow f_t$
New Equilibrium



Demand: $\uparrow f_t$
Nominal Impact



Demand: $\uparrow M_t$
Nominal Impact



Supply versus Demand

With a vertical Y^s curve, output is completely supply-determined

"Demand shocks" (shocks which shift the IS curve) affect composition of output and r_t, but not the level of output

Neoclassical model thus emphasizes supply shocks (productivity and labor preference) as chief source of fluctuations

Can get demand shocks to impact output if Y^s is upward-sloping (i.e., if interest rate affects labor supply), but doesn't change fact that model still needs to be predominantly driven by supply-shocks to make predictions which are more or less consistent with data

Qualitative Effects of Changes in Exogenous Variables

	Exogenous Shock						
Variable	$\uparrow A_t$	$\uparrow \theta_t$	$\uparrow f_t$	$\uparrow A_{t+1}$	$\uparrow G_t$	$\uparrow G_{t+1}$	$\uparrow M_t$
Y_t	+	-	0	0	0	0	0
C_t	+	-	+	?	-	-	0
I_t	+	-	-	?	-	+	0
N_t	+	-	0	0	0	0	0
w_t	+	+	0	0	0	0	0
r_t	-	+	-	+	+	-	0
P_t	-	+	-	+	+	-	+
i_t	-	+	-	+	+	-	0