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The Role of Sell Frictions for Inventories and Business Cycles

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Although investment in inventories significantly impacts GDP fluctuations, inventories are often omitted from business-cycle models due to their complex cyclical behavior. We incorporate finished-goods inventories into a New-Keynesian framework by introducing a tractable microfounded "sell friction." Our approach simplifies existing approaches by avoiding product-specific idiosyncratic shocks while capturing the essence of the popular stockout avoidance motive. Specifically, firms strategically accumulate inventories by bringing more products to the market than they anticipate selling, thereby boosting expected sales. Our setup automatically generates key stylized facts such as the countercyclical nature of the inventory-sales ratio and the greater volatility of output compared to sales under business cycles driven by monetary-policy (demand) shocks. A novel aspect of our analysis is the recognition of an inventory good as an asset and that cyclical fluctuations of its value play a key role following supply shocks. Specifically, the value of an inventory good is robustly countercyclical in our model when the productivity-growth process mirrors the observed positive autocorrelation. This ensures that the model also robustly replicates stylized inventory facts in response to productivity (supply) shocks, which has been a challenge in the literature. Using inventory and sales data to discipline the model, we find that productivity shocks account for a large fraction of GDP fluctuations, ranging from 62.5% to 94%. Furthermore, the goods-market friction yields non-trivial effects on the magnitude of aggregate fluctuations, underscoring the importance of incorporating inventories into macroeconomic models.