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Monetary Policy and Firm Entry and Exit

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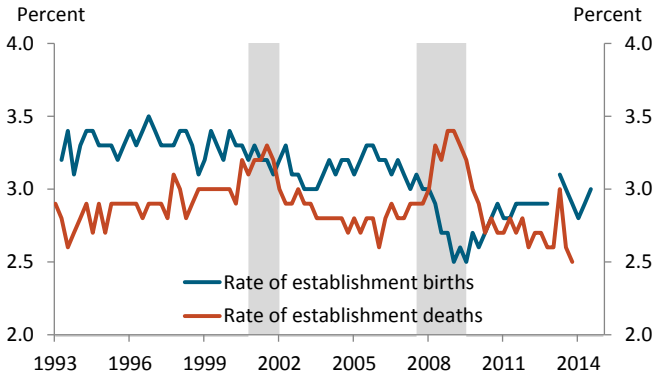
We show that a surprise increase in the level of monetary policy accommodation lowers the rate at which firms exit the market but does not significantly increase the rate at which new firms enter it. On balance, surprise increases in accommodation may reduce the reallocation of capital and workers from exiting firms to new firms. To the extent the lower rate of reallocation weighs on productivity, these effects could offset some of the possible positive supply-side effects of a surprise increase in policy accommodation stemming from higher investment and labor force participation.

In the wake of the Great Recession, several forecasters have gradually revised their estimates of potential output down as the extent of the recession's supply-side damage becomes clear. But if this damage is the result of weak demand, stimulating demand could undo some of it. The FOMC could potentially repair some of the supply-side damage from the Great Recession by making monetary policy unusually accommodative. A tight labor market, for example, could draw discouraged workers into the labor force, expanding the trend labor supply and thus potential output. A booming economy could also encourage firms to expand the capital stock through investments in plants, equipment, and intellectual property, thus raising potential output through higher trend productivity.

However, a booming economy could also negatively influence trend labor productivity by allowing unproductive firms to survive. Chart 1 shows that the rate of establishment deaths (firm exits) rises in recessions, whereas the rate of establishment births (firm entries) tends to decline. A rise in firm exits can raise concerns about employment, because it means jobs are disappearing. But more firm exits can also lead to higher reallocation: when unproductive firms are driven away, their capital and labor are freed up for more productive firms to use. Empirical studies such as Foster, Haltiwanger, and Krizan show that such reallocation is closely linked to productivity growth.

Chart 1: Establishment deaths and births



Note: Gray bars denote NBER-defined recessions. The lines show private-sector establishment deaths and births as a percentage of the average number of establishments in the previous and current quarter. The rate of establishment births hit 8.1 percent in 2013:Q1 (not shown).
Source: Bureau of Labor Statistics.

Consequently, an unusually accommodative monetary policy stance could generate a negative reallocation effect by stimulating economic activity and preventing unproductive firms from exiting. In separate papers, both Lewis and Van Zandweghe find that a surprise increase in monetary policy accommodation raises the rate of net business formation—that is, firm entries minus exits. However, the implications of this rise are somewhat ambiguous. If the rise in net business formation is due to increased firm entries, it could reflect higher reallocation across firms; if the rise is due to fewer firm exits, on the other hand, it could reflect lower

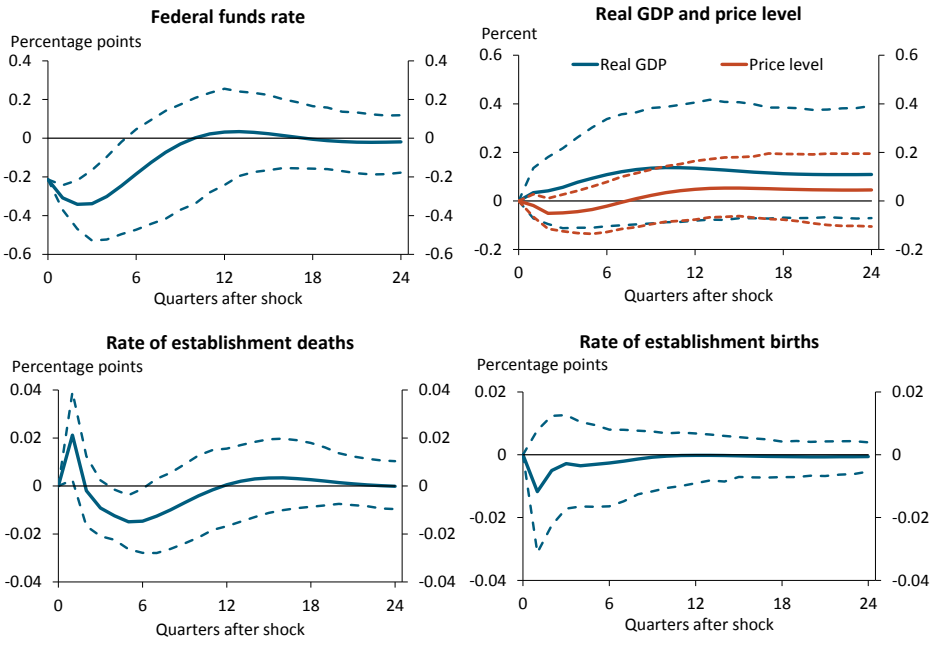
reallocation. To further assess the effects of monetary policy shocks on reallocation, and thus productivity, we examine the responses of firm entries and firm exits separately.

We use a structural vector autoregression (VAR) model to estimate the dynamic responses of firm entries and exits to unexpected changes in monetary policy. The model relates each variable to two lags of all variables in the model and to an error term that captures unexplained variations. We estimate the model using quarterly data for the rate of establishment deaths, the rate of establishment births, (log) real GDP, the (log) price index of personal consumption expenditures, and the federal funds rate from 1993:Q2 to 2007:Q4. We recover a history of monetary policy shocks from the error terms under the identifying assumption that no economic variable except the federal funds rate responds contemporaneously to such a shock.

The equation for the federal funds rate in the VAR model consists of two parts. The first is an estimated monetary policy rule describing how policy responds systematically to key macroeconomic variables. While this part may capture important interactions between the interest rate and other macroeconomic variables, it does not isolate the response to an interest rate shock. The second part of the equation is the policy shock, which captures changes in the policy stance unrelated to any changes in the macroeconomic environment. Therefore, we focus on the response of firm entry and exit to a monetary policy shock.

An unexpected increase in the level of monetary policy accommodation lowers firm exits, but does not significantly increase firm entries. Chart 2 shows the impulse responses to a one-standard-deviation expansionary policy shock. The federal funds rate drops contemporaneously with the shock before rising gradually for about two years. Real GDP and the price level increase persistently, though the responses are not significant. The responses of the rates of establishment deaths and births are of particular interest. After an initial uptick, the rate of establishment deaths gradually declines and only returns to the pre-shock level after about three years. In contrast, the response of the rate of establishment births is not significantly different from zero. On balance, then, the protracted period of lower firm exits reduces

Chart 2: Responses to a monetary policy shock



Note: The dashed lines indicate 95 percent confidence intervals obtained using the bootstrap procedure of Kilian.
Sources: Bureau of Labor Statistics, Bureau of Economic Analysis, Haver Analytics, authors' calculations.

reallocation through entry and exit after an expansionary policy shock.

But what about the current recovery? Our estimation ends at the onset of the Great Recession, when the federal funds rate reached its lower bound. The FOMC turned to unconventional policies at this time, making measuring the stance of monetary policy more challenging. Nevertheless, the pattern of reallocation appears to have changed since the Great Recession. Foster, Grim, and Haltiwanger study job reallocation and find that while downturns have, historically, been periods of increased reallocation, the Great Recession was not a time of increased reallocation.

Consistent with these findings, Chart 1 shows that in the 2001 recession, the rise in the rate of establishment deaths was much larger than the decline in the rate of establishment births, leading to increased reallocation. In contrast, in the Great Recession, establishment deaths spiked, but the opportunity for resources from these firms to be reallocated toward newly created firms was mitigated by the sharp decline in the rate of establishment births. If firm entries have become more responsive to changes in economic conditions since the Great Recession, then the negative reallocation effects of an expansionary monetary policy shock may have become smaller than historical evidence suggests.

References

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