The French Great Depression: A business cycle accounting analysis

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Abstract

Using the business cycle accounting framework [Chari V., P. Kehoe and E. McGrattan 2007. Business cycle accounting. Econometrica 75, 781–836.], this paper sheds new light on the French Great Depression. Frictions that reduce the efficiency with which factor inputs are used (efficiency wedge) were the primary factor in the economic downturn. The decline in consumption can be attributed to distortions in the Euler equation (investment wedge). In addition, frictions creating a gap between the marginal rate of substitution and the marginal product of labor (labor wedge) contributed to the slowdown of the economy after 1936. This drop in the efficiency wedge might have resulted from financial frictions, whereas the investment wedge might have been caused by financial frictions due to agency costs. Institutional changes in the labor market could serve as a potential explanation for the decline of the labor wedge after 1936.

1. Introduction

During the Great Depression, French output dropped by approximately 21% below the trend in 1939. Consumption, hours worked, and investment also collapsed and showed no sign of recovery until 1936. There are three competing explanations for this period of economic downturn. Observing that French prices increased relative to foreign prices as a result of the devaluation of the pound and dollar, Sauvy (1984) claimed that France sank deeply into a depression because the country used the deflation route rather than devaluation to return prices to competitive levels.

A second explanation claims that the worldwide Great Depression was caused by a collapse of the global money supply due to the malfunctioning of the gold standard (e.g., Eichengreen and Sachs, 1985). Output and prices declined more sharply in countries that maintained the gold standard until 1935 or 1936 (such as France) when compared to those that abandoned it in 1931. The slow adjustment of nominal wages to changes in prices is the conventional explanation for the non-neutrality of this monetary contraction.[1]

Yet another explanation was offered by Lacoue-Labarthe (2005), who asserted that France experienced several bank runs in the early 1930s that might have been

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[1] Sauvy (1984) blamed the gold standard for the Great Depression. Sauvy (1984) focused on the effects of the gold standard on international trade, whereas Eichengreen and Sachs (1985) focused on the constraints that the gold standard placed on monetary policy.

important factors in the economic crisis. The banks that went bankrupt were, in general, the most solvent ones. Notably, several other countries were also hit by banking crises in the early 1930s, including the U.S., Germany, Austria, and Hungary (see Friedman and Schwartz, 1963; Schnabel, 2004, 2009). Although the traditional view is that the consequences of bank runs in France were not as important as in other countries, it is worth bearing this interpretation in mind. This paper aims to use the Business Cycle Accounting (BCA) method, developed by Chari et al. (2007) (CKM), to determine which of the explanations provided by the literature is relevant to France.

The BCA method relies on dynamic stochastic general equilibrium models. CKM emphasize that many models incorporating frictions can be reconstructed as neoclassical growth models with four shocks: a measure of total factor productivity (TFP), a labor tax, an investment tax, and government expenditures. Within this framework (which is labeled the prototype model) CKM rename these shocks the efficiency wedge, the labor wedge, the investment wedge, and the government consumption wedge. Frictions can also be modeled in detail, but they are captured by wedges in the prototype model. The purpose of the BCA method is to identify wedges or a combination of wedges that can help explain the event under study. To address this issue, CKM propose an accounting exercise similar to the growth accounting procedure in which wedges measure the deviation of the fluctuations described by the neoclassical growth model from the fluctuations observed in the data. As a result, one can generate series for the wedges and feed them back into the prototype model individually and in combination. Through this process, one can evaluate the contribution of the wedges to the observed fluctuations in the variables of interest.

The study closest to our work was conducted by Beaudry and Portier (2002). They assessed the ability of the real business cycle (RBC) model to replicate the economic fluctuations in France during the 1930s. They found that their measure of TFP cannot account for the collapse of economic activity. Subsequently, they conducted more growth accounting to investigate how the stagnation in the measured TFP can be reconciled with the fact that there was technological progress in France throughout the 20th century. Observing that investment collapsed dramatically in the 1930s, they considered whether technological embodiment can explain stagnation in TFP. Indeed, under the technological embodiment hypothesis, technological progress does not directly affect the production function, but instead affects the transformation of investment into capital. Therefore, if

levels of investment fall, then technological progress would not appear in production. After assuming the presence of embodiment and a constant growth rate in technological progress, they replicated the TFP stagnation. They concluded that technological stagnation is neither sufficient nor necessary to explain the French depression.

The primary conclusions of our work can be summarized as follows: The efficiency wedge seems to be the main culprit for the French Great Depression because it sufficiently explains the observed fluctuations in output throughout the 1930s. The decline in the efficiency wedge may have resulted from financial frictions causing an inefficient use of factor inputs. The efficiency wedge is also able to explain most of the collapse in labor. It is also important to understand investment behavior during this period; however, the efficiency wedge contributes very little to any fluctuations in consumption.

The investment and labor wedges played a secondary role in the economic downturn. The investment wedge accounts for a non-negligible fraction of the decrease in consumption. This wedge might capture financial frictions caused by an agency problem (as in Carlstrom and Fuerst, 1997). In turn, the contribution of the labor wedge is only significant after 1936, which could explain why the economy remained at a low level after 1936. We argue that the behavior of the labor wedge after 1936 may have been caused by the labor market reforms introduced by the government of the Front Populaire. The government consumption wedge accounts for almost none of the observed fluctuations in output, labor, investment, and consumption.

The results of the BCA method suggest that the banking crisis hypothesis of Lacoue-Labarthe (2005) should be taken more seriously when studying the French Great Depression. Bank runs may have worsened the financial frictions that affect the efficiency of the use of factor inputs. However, our findings lead us to reject both the gold standard explanation and Sauvy's (1984) explanation. The hypothesis that a monetary contraction in conjunction with nominal sticky wage could have caused a decrease in the labor wedge is not supported by the data. After all, the labor wedge does not play an important role during the interwar gold standard period. In turn, the loss of French competitiveness can be captured by the government consumption wedge, yet, that wedge cannot account for the depression. We believe that our results contrast with the conclusions of Beaudry and Portier (2002) because we have constructed a different measure of TFP. We have made different assumptions regarding the production function and the measurement of factor inputs when