



## The Growth Consequences of Dodd-Frank

*Douglas Holtz-Eakin*

May 6, 2015

### Executive Summary

The Dodd–Frank Wall Street Reform and Consumer Protection Act (Dodd–Frank) was enacted in 2010. It created new agencies and bureaus, changed capital requirements, revamped securitization rules, changed the oversight of derivatives, imposed the Volcker Rule, and had provisions for corporate governance.

This short paper looks at the growth impacts of the banking sector’s response to these requirements and the burden of compliance costs. The consequences are significant – roughly \$895 billion in reduced Gross Domestic Product (GDP) over the 2016-2025 period, or \$3,346 per working-age person. Clearly, such a computation is subject to large uncertainties, but the order of magnitude is instructive.

### Introduction

Dodd-Frank was a [sweeping reform](#). It created new agencies and bureaus: the Financial Stability Oversight Council (FSOC), the Office of Financial Research in Treasury, the Consumer Financial Protection Bureau (CFPB), the Federal Insurance Office in Treasury, an Office of Credit Ratings within the Securities and Exchange Commission and others. It revamped securitization rules; changed the oversight of derivatives; changed the prudential standards for risk-based capital, leverage, liquidity, and contingent capital; imposed the Volcker Rule, had provisions for corporate governance, and more. And, in the process of being implemented, it required [398 separate rulemakings](#) that are still not complete nearly five years later.

It is widely perceived that this massive regulatory initiative has generated uncertainty that has [harmed lending](#). It is even more likely that the banking sectors response to these requirements and the burden of regulatory compliance have been an effective tax on the banking sector that has harmed lending, investment and growth. To date, however, there has been little quantitative evidence on the magnitude of these impacts.

This short paper looks at the growth impacts of these requirements and the burden of compliance costs. I modify a standard model of economic growth (the “Solow model”) to incorporate these features and then use a parameterized version to estimate the impact.

To anticipate the results, the growth consequences are significant – \$895 billion in reduced Gross Domestic Product (GDP) or \$3,346 per working-age person over the next 10 years. Clearly, such a computation is subject to large uncertainties, but the order of magnitude is instructive.

### A Framework for Analysis

The framework focuses on the links between saving and investment in the economy as a whole. Investment, in turn, drives growth in the capital stock that, when combined with growth in labor, generates growth in output or GDP. Because the goal is to understand



how fast the standard of living rises, the entire exercise focuses on growth in capital per working age individual (labor) and income per person.

The starting point is the observation that national saving finances national investment:

$$(1) \quad I = S$$

However, the presence of capital and other requirements, compliance burdens and other costs means that not all savings are channeled into productive investments; in part these features serve as a “tax” on intermediation:

$$(1') \quad I = S(1-\tau)$$

where  $\tau$  is the effective tax rate. Investment is, by definition the change in the amount of capital, meaning that the growth in the capital stock is given by:

$$(2) \quad g_K = I/K = S(1-\tau)/K$$

Saving is, in turn, equal to the saving rate ( $s$ ) times income or GDP ( $Y$ ):

$$(3) \quad g_K = sY(1-\tau)/K$$

Using lower case letters to denote capital per worker ( $k$ ) and GDP per worker ( $y$ ) yields:

$$(4) \quad g_K = s(1-\tau)y/k$$

Finally, notice that the difference between growth in the overall capital stock ( $g_K$ ) and growth in capital per worker ( $g_k$ ) is the rate of population growth ( $\eta$ ):

$$(5) \quad g_k = g_K - \eta$$

Collecting all these results, the growth rate of capital per worker is generated by:

$$(6) \quad g_k = s(1-\tau)y/k - \eta$$

The last step in developing the framework is to recognize that the growth of income per worker ( $g_y$ ) is related to the growth of capital per worker by:

$$(7) \quad g_y = \theta g_k = \theta s(1-\tau)y/k - \eta$$

where  $\theta$  is the share of national income earned by capital (as opposed to labor). Equation (7) is crucial to the analysis because it indicates that the change ( $\Delta$ ) in the growth rate when the effective tax on intermediation rises is given by:

$$(8) \quad \Delta g_y = -\theta s(y/k)\Delta\tau$$



The remainder of this short paper is devoted to exploring the empirical magnitudes implied by the Dodd-Frank burden and equation (8).

### Estimating the Growth Impact of Dodd-Frank

The starting point for fleshing out the growth implications of the increased Dodd-Frank burdens is using data from the Bureau of Economic Analysis (BEA) to develop estimates of the [share of capital](#) in national income,  $\theta$  (0.39 in 2013); the gross [national saving rate](#),  $s$  (17.6 percent in 2013); and the ratio of output to capital  $y/k$ , ( $=Y/K$ , 0.33 in 2013). Collecting these results, they imply that the change in the growth rate of income will be roughly 2.3 percent of the change in the effective tax rate on intermediation of saving and investment.

How large is that tax increase? To begin, note that Dodd-Frank is mainly concentrated on the banking sector, while other forms of transforming saving into investment are essentially unaffected. One can think of the overall effective tax rate as a weighted average of the impacts on the banking sector and non-banking financial sectors. For 2013, the BEA shows that fixed investment totaled \$2,769.5 billion while the Federal Reserves Flow of Funds [data](#) put total bank lending for these purposes at \$786.8 billion. Taken together, this suggests that banking has a 28.4 percent share of overall intermediation.

What did Dodd-Frank do to the effective tax rate on banks? Consider, first, the burden of complying with the new regulations. The American Action Forum’s analysis of the Federal Register indicates that the cumulative burden (including the market value of paperwork hours for compliance) is roughly \$14.8 billion annually. Notice that after-tax income in the presence of the burden is:

$$(9) \quad [rL - C - \text{Burden}](1-\tau_B)$$

where  $r$  is interest on loans ( $L$ ),  $C$  is the cost of acquiring funds and other operations, and  $\tau_B$  is the tax rate on banks. Suppose that instead of a burden, the same after-tax income was generated by simply raising the tax rate to  $\tau'$ . Then, by definition:

$$(10) \quad [rL - C - \text{Burden}](1-\tau_B) = [rL - C](1-\tau')$$

Equation (10) can be re-arranged to yield:

$$(11) \quad \tau' = \tau_B + (1-\tau_B)[\text{Burden}/(rL-C)]$$

To put some empirical meat on (11), the Federal Deposit Insurance Corporation’s (FDIC) [Quarterly Banking Profile](#) (QBP) provides information on taxes (\$67.5 billion) and net income (\$151.2 billion) that permit one to compute an initial tax rate of 31 percent. Using the AAF burden data and (11) yields an increase to 37.8 percent from compliance burdens.



## RESEARCH

A similar approach can be used to transform the roughly 2 percentage point rise in the leverage ratio of the banking sector (from 7.5 to 9.5 percent) from 2008 to 2014 into a rise in the effective tax rate. The banking sector responded to Dodd-Frank by holding more equity capital, thus require it to have greater earnings to meet the market rate of return – the same impact as raising taxes. In this case, the higher leverage ratio translates into a further increase in the effective tax rate to 40.3 percent, for a total rise of 9.2 percent.

Collecting results, the impact on economic growth is a decline in the per capital growth rate of 0.059 percentage points annually. Is this a big deal? Consider lowering the growth rate in the Congressional Budget Office [baseline projections](#) by exactly this amount between 2016 and 2025. The lower rate of economic growth translates into a total loss of \$895 billion in GDP or \$3,346 for every member of the working age (16 and older) population over those 10 years.