Journal of Monetary Economics 105 (2019) 21–23

Contents lists available at ScienceDirect

Journal of Monetary Economics

journal homepage: www.elsevier.com/locate/jmoneco

Comments on 'Loss-offset provisions in the corporate tax code and misallocation of capital'

Venky Venkateswaran [a,b,*]

[a] FRB Minneapolis, United States
[b] NYU Stern, United States

ARTICLE INFO

Article history:
Received 10 April 2019
Accepted 11 April 2019
Available online 26 April 2019

1. Introduction

A large and growing body of work analyzes the 'misallocation' of productive resources across firms and the resulting adverse effects on aggregate productivity and output.[1] This literature is motivated by the finding that the average products (i.e. the ratio of value-added to inputs) exhibits considerable cross-firm variation within narrowly defined industries, suggesting potentially large aggregate consequences. Interestingly, this is true even for large firms in developed countries: for example, David and Venkateswaran (2019) estimate that the cross-sectional dispersion in the value-added to capital ratio among publicly-traded firms in the US, while smaller than estimates for firms in China and India, implies aggregate TFP losses of almost 20% (through the lens of the canonical Hsieh and Klenow, 2009 framework). A key objective of this literature is to uncover the role of policy-induced distortions.

Kaymak and Schott (2019) make an important contribution to this literature by exploring the role of a specific policy, namely provisions in the tax code relating to the treatment of losses. Tax laws allow losses to carried both 'forward' and 'backward', i.e. to be offset against both past and future earnings. But, these offsets are subject to limits, which creates variation in marginal tax rates (MTR) across otherwise identical firms. A firm which has incurred losses in the recent past can deduct them from current earnings for tax purposes, which means it faces a lower tax rate on its current capital income relative to a firm without accumulated loss deductions.

The first contribution documents considerable heterogeneity in MTRs across firms and shows that this variation is correlated with observed revenue-capital ratios. In particular, firms in the bottom tercile of the MTR distribution, on average, face effectively no taxes on their profits and have significantly low Y/K ratios, implying low marginal products of capital, while the top tercile pays an average MTR of 34% and has high Y/K ratios.

In order to quantitatively evaluate the aggregate consequences of these distortion, Kaymak and Schott (2019) use a standard model of firm dynamics in the tradition of Hopenhayn and Rogerson (1993), augmented with a detailed model of profit taxes. The model is calibrated to match standard moments from the firm dynamics literature (e.g. persistence of firm-level TFP, entry/exit rates, returns to scale) as well as new moments on tax incidence (fraction of firms paying taxes, fraction of

* Corresponding author at: Economics, 7-81 Kaufman Management Center, New York, NY 10012, United States.
E-mail address: vvenkate@stern.nyu.edu

[1] See Restuccia and Rogerson (2017) and Hopenhayn (2014) for recent surveys.

https://doi.org/10.1016/j.jmoneco.2019.04.008
0304-3932/

net income taxed). The calibrated model is used to evaluate the effect of replacing the current corporate tax system with a revenue-neutral value-added tax (VAT). This not only eliminates both the cross-sectional dispersion in tax rates, but also corrects the inefficient taxation of capital (relative to labor). The model predicts substantial effects on aggregate economic activity from this reform, with GDP rising by 14% in the long-run steady state relative to status quo. Other, arguably more realistic reforms, like eliminating loss-offset provisions altogether (i.e. not allowing firms to carry losses forward or backward) or implementing full-offset (where firms are given cash rebates) are also analyzed.

In this note, I will focus on three key issues. The first pertains to the quantitative results and the key drivers of the aggregate gains, the second points to the potential for bias from the omission of other factors influencing firm-level investment choices and the third highlights the role of financing. Hopefully, these comments will serve to guide future work in this area.

1.1. Sources of aggregate gains

The quantitative results – presented in Table 6 of Kaymak and Schott (2019) – reveal that the large output gains from switching to a VAT arise mostly from increased capital accumulation rather than an improvement in allocative efficiency. In particular, aggregate TFP rises by only 1% under the VAT system relative to the baseline, while the aggregate capital stock rises by 34%. While selection makes TFP a somewhat complicated endogenous object, these results seem to suggest that the inefficiency induced by heterogeneity in marginal tax rates (and the associated misallocation of capital), while economically meaningful, is quite modest compared to that induced by the asymmetric treatment of labor and capital income. Another way to see this is to note that removing loss-offset provisions or moving to a full-offset system produces much more modest, though still economically meaningful, gains (output goes up by 2% if the provisions are removed from the existing code).

1.2. Role of other factors

The model in Kaymak and Schott (2019) is an essentially frictionless model of investment and abstracts from all other factors, both dynamic (e.g. adjustment costs) and static (e.g. variation in markups). This limits the ability of the framework to match observed investment moments (e.g. variability and/or serial correlation) but, perhaps more importantly, also raises an obvious concern: are conclusions about the quantitative effects of heterogeneity in MTRs biased by the omission of other factors?

To partly address this concern, Kaymak and Schott (2019) run the following regression:

$$\log\left(\frac{Y_i}{K_i}\right) = \beta \log\left(\frac{1}{1-MTR_i}\right) + \gamma X_i + \epsilon_i \ , \tag{1}$$

where X_i is a set of controls and ϵ_i, an (unobserved) error term meant to capture other factors affecting $\ln Y_i/K_i$. This produces an estimated regression coefficient $\beta = 0.997$. Under the assumption that the ϵ_i are exogenous, this is a consistent estimate of the elasticity of *mpk* with respect to tax rates. However, the exogeneity assumption is quite restrictive. For example, consider a world with convex adjustment costs and loss-offset provisions (along with persistent productivity). The former by itself induces variation in *mpk* that is correlated with firm-level productivity while the latter leads to MTRs that also vary systematically with productivity, violating the exogeneity assumption. In such a setting, the true elasticity of *mpk* w.r.t. tax rates could be significantly lower than the estimates from the regression. The best, if computationally demanding, way to make progress here is to build a flexible structural model, which explicitly allows for other factors along with heterogeneity in tax rates and calibrate it to match a wide set of moments from the data. This would help paint a more complete picture of the interactions between these factors and tax policy.

1.3. Financing

The extent to which marginal tax rates affects capital choices depends on how they are financed. Since interest payments are deductible for tax purposes, to the extent investment is funded with debt, it is not affected by taxes on profits. This channel could attenuate (and in the limit of all debt financing, even eliminate) the distortionary effects of heterogeneity in MTRs. To deal with this concern, Kaymak and Schott (2019) analyze a variant of their model with an exogenous leverage ratio (calibrated to match the leverage observed in the Compustat data). It produces slightly lower gains relative to the baseline. While this is a re-assuring finding, a more careful treatment of the interaction between tax and financing is warranted. To the extent that leverage ratios covary systematically with tax incidence, as predicted by the trade-off theory of the capital structure,[2] fixing leverage exogenously at the average level might underestimate the attenuation (i.e. overstate the efficiency losses from heterogeneity in MTRs). In other words, if firms respond to high (low) tax rates by increasing (decreasing) the share of debt financing, their capital choices would be less distorted. To fully sort out this issue, one would need to explicitly model debt choices and calibrate it to match cross-sectional data on leverage and tax rates. Such an exercise could also shed light on the quantitative significance of the trade-off theory.

[2] The trade-off theory states that the level of debt is chosen by trading off the tax shield on interest payments against potential costs, e.g. bankruptcy. For a classic treatment, see Kraus and Litzenberger (1973).

2. Conclusion

Kaymak and Schott (2019) present a novel channel through which corporate taxes can affect allocative efficiency, capital accumulation and aggregate output. Combining a clean theoretical framework with rich micro data, they find significant gains from removing loss-offset provisions, which are a pervasive feature of tax regimes all over the world. These findings have important implications for tax policy and points to a promising direction for future research – embedding a detailed model of tax incidence in richer, more sophisticated models of firm dynamics, which would enable a more thorough quantitative evaluation.

References

David, J.M., Venkateswaran, V., 2019. The sources of capital misallocation. Am. Econ. Rev. forthcoming.
Hopenhayn, H., Rogerson, R., 1993. Job turnover and policy evaluation: a general equilibrium analysis. J. Pol. Econ. 101 (5), 915–938.
Hopenhayn, H.A., 2014. Firms, misallocation, and aggregate productivity: a review. Annu. Rev. Econ. 6 (1), 735–770.
Hsieh, C., Klenow, P., 2009. Misallocation and manufacturing TFP in China and India. Q. J. Econ. 124 (4), 1403–1448.
Kaymak, B., Schott, I., 2019. Loss-Offset Provisions in the Corporate Tax Code and Misallocation of Capital. Discussion paper.
Kraus, A., Litzenberger, R.H., 1973. A state-preference model of optimal financial leverage. J. Finance 28 (4), 911–922.
Restuccia, D., Rogerson, R., 2017. The causes and costs of misallocation. J. Econ. Perspect. 31 (3), 151–174.