

Does Employer Withholding Affect Tax Compliance, and Why?

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Across countries and over time, withholding features in nearly all mass-based personal income taxes, suggesting that withholding might play an important role in collecting substantial revenue through the personal income tax. With few exceptions, member countries in the Organization for Economic Co-operation and Development (OECD) withhold income taxes from wages (OECD (2015)). In the U.S., withholding from most employees' wages has been common since the beginning of Social Security in 1937, and was extended to the income tax in 1943 as part of the growth of the income tax during the second world war. Income tax withheld from employees' paychecks now totals 6.9 percent of Gross Domestic Product (Internal Revenue Service (2018)), making withholding the single largest source of U.S. government revenue. Jensen (2016) finds that the income tax in most countries and over time applies only to income groups that are at least 80 percent workers. In effect, income tax is collected in large numbers only from employees. When States adopt the Federal system of information reporting and withholding, revenues rise 28 percent (Dusek and Bagchi (2017)). This evidence is often offered to support the efficacy of third-party information reporting, but information reporting is not the only enforcement policy that distinguishes employees from nonemployees; withholding from wages also applies only to employees.

On reading most of the literature on the economics of tax enforcement, one might conclude that tax enforcement is solely a matter of ascertaining the correct tax liability. The tools employed to that end, audits and reports by third parties, are useful correctives to taxpayers' own reports of the tax due. The canonical model of tax enforcement, due to Allingham and Sandmo (1972), is a model of reporting enforcement. Audit departments are a major component of tax administration across the world. A plethora of recent studies highlight the effectiveness of information reporting by third parties, across income sources (Kleven, *et al.* (2011), Internal Revenue Service (2017)), with reporting compliance much higher for employees than for the self-employed. Information reporting also features prominently in comparisons across taxes, with third-party reports a key feature of the VAT (Pomeranz (2015)). An efficient tax system is one in which the tax authorities have the right information.

Missing from this picture is how the tax is collected, how revenue makes its way from private pockets into government coffers. Once the amount owed is clear, one might think obtaining payment is only a matter of follow-through. Why, then, do 14 million U.S. taxpayers owe \$138 billion in unpaid tax, penalties, and interest (Internal Revenue Service (2018, p.11))? Why are collection divisions a major feature of tax administrations worldwide, expending administrative resources? Taxpayers may admit that tax is due but fail to follow through by making the payment. Tax compliance includes not only reporting, but also filing and payment, as Mazur and Plumley (2007) emphasize.

Precisely why taxpayers do not follow through remains unclear. Taxpayers might decide, given other expenditure needs, that paying taxes late is worth the interest and penalties. So long as they follow through, that decision need not harm either revenue or efficiency. Circumstances may change, and with them, taxpayers' ability to pay. Taxes are not the only payments on which people fail to follow through. Taxpayers are far from

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fully informed, and the institutional environment is thus important. For example, simplified mailings increase Earned Income Tax Credit take-up (Bhargava and Manoli (2015)). Taxpayers may fail to follow through on their obligations to the government for many reasons: inattention given costs of becoming informed; money, time, and mental resources required to plan and to make a payment; or procrastination. Taxpayers may also take the opportunity, if available, to escape making payment altogether.

The relevant tools for tax reporting are well understood, while the tools for collecting tax payments at low administrative cost and burden to taxpayers are not well understood in the tax administration literature. If the only priority was collecting revenue, one might consider whether enough payment could be compelled in advance to cover whatever liability might arise. Income tax withholding from wages is a series of largely automatic advance payments, although in practice it does not cover all liabilities; in 2017, some 21 percent of taxpayers were required to make an additional payment when liabilities were settled (Internal Revenue Service (2018)). High rates of withholding reduce the administrative costs of obtaining payment after the fact but may impose burdens on taxpayers whose income awaits the day tax is reckoned and any excess refunded. The burden of locking away income is linked to the difficulties of borrowing against future refunds, if any, to smooth consumption. Yet the financial burden taxpayers bear from withheld income may be offset by the relief withholding provides from the time, stress, and mental burdens of making tax payments.

There is a small literature on the effects of withholding, which does not address the causal effect and mechanisms connecting withholding to individual behavior. The Internal Revenue Service (2016) reports that withholding is correlated with compliance across income sources, and taxpayers who would owe tax if filing truthfully underreport more liability in random audit data (Chang and Schultz (1990)). Differences across income sources or across taxpayers could explain this correlation even absent a causal effect of withholding. Brockmeyer and Hernandez (2016) find that increased sales tax withholding from firms increases compliance, a result they attribute to high costs that prevent firms from obtaining refunds. If a firm will not obtain a refund, then the tax withheld is the effective tax burden, and so there is no marginal cost of reporting more liability. Around the zero-refund amount, bunching in reported tax liability suggests loss aversion (Rees-Jones (2017)), which is consistent with underreporting in response to rounding changes in withholding that cross the zero-refund amount (Engstrom, *et al.* (2015)). Evidence of a local effect of withholding suggests that withholding may be important more generally. A 1992 reduction in withholding led to reduced contributions to tax-preferred retirement accounts (Feldman (2010)), behavior consistent with mental accounts.

I focus my analysis on how and why taxpayers respond to the tax withheld from their paychecks. Variation in withholding across taxpayers comes from an interaction between two policies included in the 2009 American Recovery and Reconstruction Act. I then use a difference-in-differences strategy to compare affected and unaffected taxpayers. IRS administrative data allow me to examine responses including late and partial tax payments and the timing of when returns are filed. I find that, on average, 6 percent of the amount of reduction in withholding is not paid on time and is instead mostly repaid with penalties and interest over the following several months. Taxpayers whose withholding is cut are also more likely to file late returns. Taxpayers with income from liquid assets are equally affected by the policy change, suggesting that the response is behavioral, rather than driven by a need for liquidity.

I use policy variation in withholding from an interaction between the Making Work Pay payroll tax credit and Economic Recovery Payments in Tax Year 2009. Withholding policy is set uniformly across taxpayers in any given year because employers use only a single set of tables to calculate the amount to withhold, so variation across taxpayers is difficult to obtain. The interaction between the two policies I study arises from stimulus policies aimed at providing workers and retirement and disability beneficiaries with cash in hand, with rules designed to prevent taxpayers from receiving the full benefits of both policies. The Economic Recovery Payments were \$250 checks mailed in May 2009 to each recipient of Social Security retirement or disability, Railroad Retirement Board, or Veterans' retirement or disability benefits. The Making Work Pay credit offset payroll taxes of 6.2 percent up to a maximum of \$400 (\$800 if filing jointly), phased out beginning at \$75,000 (\$150,000) of earned income, and was accompanied by a cut in withholding equal to the full credit implied by each employee's wage amount. Balances due at filing thus did not change for employees whose household did not receive an Economic Recovery Payment check. However, households both earning wages and receiving

an Economic Recovery Payment check had their tax credit reduced by the amount of the check. I restrict the analysis to households whose wages would, absent a check, imply at least \$250 of credit. Among these households, the treated households would have received advance benefits of up to \$650 (\$250 as a check and \$400 as a withholding cut), but after filing were eligible for only \$400 total, with \$250 coming from the check and at most \$150 from the credit. At the end of the day, treated households owed \$250 with their tax returns because they received more benefits in advance than they were eligible for. Comparing treated and control households, total benefits for both were \$400, while the timing of benefits differed.

The IRS administrative data I use combine information from tax returns, demographic information and stimulus payment receipt data from the Social Security Administration, and information on the timing of tax filings, payments, and tax debts. I take a random sample of 1 percent of the universe of taxpayers and of 10 percent of taxpayers receiving a stimulus payment, which after limiting to primary filers and to households where all taxpayers are between 30 and 70 years of age leaves me with about 850,000 households per year. All taxpayers need not appear in all years due to the filing restriction.

I employ an event-study version of a difference-in-difference specification comparing taxpayers earning substantial wages who did and did not receive a stimulus payment. In addition to the standard household and time fixed-effects, I allow for nonparametric time trends in compliance by pretreatment demographics including age, filing status before treatment, age of spouse, and dependents. As stimulus payment recipients are on average older and there are substantial trends in compliance by age, these covariates contribute to parallel pretreatment trends in the compliance outcomes I study between the two groups. The event study coefficients before treatment provide evidence for the assumption that, absent treatment, the difference between treated and control groups would remain constant. The coefficients for 2009 indicate that treated taxpayers whose withholding was reduced are more likely to pay and file late, while in later years the point estimates are much smaller and of the opposite sign, which perhaps suggests that taxpayers react to the adverse effects of a reduction in withholding by requesting additional withholding or making estimated payments in later tax years.

Studying which taxpayers are affected by a change in withholding, I find evidence that the mechanism is behavioral, and not a result of demand for liquidity, as captured by several measures of interest and dividend income. Repeating the difference-in-difference analysis among only those taxpayers whose tax returns indicate that they hold liquid assets, the results are the same. These taxpayers pay their taxes late even though they could obtain higher net returns by paying their taxes out of liquid assets like bank deposits, because the interest and penalties on tax debt exceed the return on these assets. This result holds for several measures of liquid assets: positive interest income, substantial amounts of interest income, interest income in each of the past 4 years, and dividend income. Behavioral, rather than liquidity-driven, effects of withholding suggest that withholding benefits—rather than hurts—taxpayers. Withholding enough tax that no balance is due at filing saves taxpayers time, effort, and money in the form of interest and penalties.

While the effect of the change in withholding I study might differ from the effect of larger changes in withholding, the effects I find suggest that there are advantages for tax compliance when taxpayers are employees rather than independent contractors, even if contractors' income is fully subject to information reporting. As contractors are responsible for estimated tax payments, which have been declining over time in Federal Reserve Economic Data, any increase in independent contractors may be cause for compliance concern as contractors owe larger sums at tax filing. In fact, IRS *Data Books* indicate that the number of taxpayers owing unpaid assessments each year has ballooned from 4.3 million newly delinquent accounts in 1999 to 8.3 million newly delinquent accounts in 2017 (Internal Revenue Service (2001 and 2018)).

Effects of withholding provide a caveat to the traditional view in public finance that the party remitting the tax does not matter for incidence; the compulsory payment of tax by employers may have different implications from the voluntary payment of tax by workers who are not employees for how much tax is paid, what the burdens employees bear are, and how great the administrative costs are. The view that remittance does not affect incidence has encountered recent empirical challenges, for example Kopczuk, *et al.* (2016) find that diesel tax evasion changes when remittance responsibility is shifted to a different level of the production chain.

Reducing withholding while holding tax liability constant, as in the 1992 withholding cut, might appear to provide economic stimulus when it is needed without reducing tax revenues, but this form of stimulus has un-

intended consequences. Shapiro and Slemrod (1995) find that 43 percent of consumers surveyed said that they would spend most of the income this policy shifted forward from their refunds or balances due to their paychecks. This policy not only shrank refund amounts, but also led some taxpayers to owe new or larger balances due. While shrinking refunds cannot affect whether taxpayers pay on time, my results suggest that additional balances due lead to increases in late tax payments, creating both additional administrative costs and taxpayer burdens. The 2009 stimulus, in contrast, aimed to reduce taxpayers' tax liability and withholding by the same amount, and any increases in balances due like those I study were unintentional. While providing stimulus by reducing tax liability alongside withholding costs tax revenue, this method of providing stimulus avoids additional administrative and taxpayer burdens because it does not change the balances taxpayers owe at filing.

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