Independent Taxation, Horizontal Equity, and Return-Free Filing

Jeffrey Liebman, *Harvard University and NBER*
Daniel Ramsey, *Cornerstone Research*

Executive Summary

Switching from joint to independent taxation of spouses in married couples would reduce marginal tax rates on secondary earners, make the tax system marriage neutral, and facilitate return-free filing through exact withholding. This switch would, however, abandon the perspective that total household income is the best measure of ability to pay. This paper investigates the vertical and horizontal equity implications of a switch from joint to independent taxation of the sort that might occur in conjunction with adoption of return-free filing. There are two main findings. First, although there are winners and losers from the reform, there are enough free parameters such that it is possible to design an independent taxation system that approximately matches the current distribution of the tax burden by income decile and thus causes little change in vertical equity. Second, because the existing treatment of married couples under the tax code is far from the ideal that would be prescribed based on strict application of utilitarian ability-to-pay principles, the horizontal equity losses under independent taxation from not taking total household resources into account are offset by other horizontal equity gains. In particular, the current system often treats one-earner couples more favorably and two-earner couples less favorably than ability-to-pay considerations would suggest, and independent taxation reduces this inequity. On net, a switch to independent taxation would produce a very small reduction in horizontal equity, a cost that is likely to be outweighed by simplicity and efficiency gains.

I. Introduction

More than 30 countries, including the United Kingdom and Japan, operate personal income tax systems in which the majority of taxpayers

do not need to file tax returns (GAO 1996). Instead, these countries use withholding systems in which the correct amount of tax is withheld during the year.[1]

The tax systems in most of the return-free countries are much simpler than the US tax system, and studies have shown that in the absence of similar simplifications the benefits of a return-free system for the United States would be limited (Gale and Holtzblatt 1997; US Treasury 2003; Goolsbee 2006). Four main simplifications would be needed for the United States to realize the full reduction in taxpayer compliance costs achievable from a switch to return-free filing (see, e.g., US Treasury 2003, 2–4): (i) the complicated set of child-related tax provisions would need to be replaced by a simple child benefit; (ii) capital income would need to be taxed at a flat rate and withheld at source; (iii) deductions would need to be limited; and (iv) married spouses would need to be taxed independently. For the first three of the simplifications, a strong case can be made for the changes even in the context of the current tax-filing system.

A.   Child Benefits

Research has shown that existing tax provisions associated with children (including dependent exemptions, the earned income tax credit [EITC], the child credit, and childcare deductions and credits) are complex and produce high marginal tax rates and large marriage penalties for many taxpayers (Cherry 1998, Ellwood and Liebman 2001). In addition, because the value of tax deductions increases with a filer's marginal tax rate, high-income taxpayers can sometimes receive larger child-related tax benefits than those with lower incomes. Following the model of many other countries, these provisions could be replaced with a flat child benefit that does not depend on income, supplemented with a means-tested child benefit administered separately from the core tax system. The replacement of the dependent exemption with an expanded child credit in the 2017 tax legislation is a step in this direction.

B.   Capital Income

Many of the most complicated features of the existing tax code are associated with the reporting of capital income. Currently capital income is taxed at different rates according to type of income and length of holding period. Simplifying the taxation of capital income by taxing it all at a

single rate via withholding at source could ease integration of the personal and corporate income taxes, ending the double taxation of earnings from corporate equity.

C.   Deductions

Tax deductions distort consumption decisions, shrink the tax base (leading to higher tax rates and greater deadweight loss), and often have perverse distributional consequences. Experts ranging from Gephardt (1995) to the President's Advisory Panel on Federal Tax Reform (2005) to Feldstein (2010) have proposed limiting or eliminating many deductions. Countries with return-free systems often maintain a few deductions, but claiming these deductions requires a procedure outside of the basic tax-filing mechanism. These alternate procedures typically result in subsidy rates that are independent of income, in contrast with the current US system in which subsidies depend on a taxpayer's marginal tax rate and therefore rise with income.[2]

D.   Independent Taxation

The fourth simplification, independent taxation, involves more difficult tradeoffs. In a tax system with multiple brackets, independent taxation greatly facilitates the exact withholding required for a return-free system because it eliminates the need for information about one spouse's income to be communicated to the other spouse's employer. Independent taxation would also reduce marginal tax rates on secondary earners and eliminate inequities associated with treating cohabitation differently from marriage. But there is a potentially serious drawback to independent taxation. Since household members share economic resources, a strong argument can be made on ability-to-pay grounds that total household resources should be taken into account in determining tax liability (Stiglitz 2000, 619–20).

This paper uses data from NBER's TAXSIM model along with additional data from the Current Population Survey (CPS) to investigate the vertical and horizontal equity implications of a switch from joint to independent taxation of the sort that might occur in conjunction with adoption of return-free filing.[3] There are two main findings. First, although there are winners and losers from the reform, as there will be in any revenue-neutral tax reform, there are enough free parameters such that it is possible to design an independent taxation system that approx-

imately matches the current distribution of the tax burden by income decile and thus causes little change in vertical equity. Second, because the existing treatment of married couples under the tax code is far from the ideal that would be prescribed based on strict application of utilitarian ability-to-pay principles, the horizontal equity losses under independent taxation from not taking total household resources into account are offset by other horizontal equity gains. In particular, the current system often treats one-earner couples more favorably and two-earner couples less favorably than ability-to-pay considerations would suggest, and independent taxation reduces this inequity. On net, a switch to independent taxation would produce a very small decline in horizontal equity, a cost that is likely to be outweighed by simplicity and efficiency gains.

II.   Debates about Independent Taxation

In 1970, Greece was the only European Union country employing independent taxation. Since then, Austria, Belgium, Denmark, Finland, Italy, the Netherlands, Spain, Sweden, and the United Kingdom have all switched to independent taxation of earned income. Australia and Japan also use independent taxation (Congressional Budget Office 1997; O'Donoghue and Sutherland 1998).

In Europe, the switch was partly the result of an unusual alliance between feminists and pro-family groups (Soler Roch 1999). In many European countries, joint taxation was implemented as a patriarchal tax system in which only men were considered to be taxpayers, and married men were required to pay tax on the combined incomes of themselves and their spouses.[4] Reformers called for abolishing this approach and providing equivalent treatment of men and women.[5] There was also a second reason for reform. Under the joint taxation systems in place in Europe around 1970, couples faced large marriage penalties once women started to enter the paid labor force. Indeed, in several countries the same tax schedule applied to both single individuals and married filers. Pro-family groups therefore favored reform as a way to eliminate marriage penalties.

In the United States, the political dynamic was different. Since 1948, family income has been the tax base for married households, and the rate structure from 1948–69 was equivalent to income splitting, resulting in large marriage bonuses.[6] So initially there was neither the feminist nor pro-family impetus for reform. But US tax legislation in 1969 widened the tax brackets for single tax filers, introducing marriage penalties

to the US tax system for some taxpayers (many others continued to receive marriage bonuses), and several prominent economists started raising concerns about both the equity and efficiency properties of the US system of joint taxation.

Rosen (1977) argued that independent taxation would make the tax system marriage neutral, and would reduce marginal tax rates on secondary earners—earners who, optimal tax theory suggests, should have low marginal tax rates because they have high labor supply elasticities. Munnell (1980) emphasized that independent taxation was an appealing response to the increase in two-earner couples, in cohabitation rates, and in divorce. She noted that assessing the same tax on a one-earner and two-earner couple with the same income raises equity concerns because the one-earner couple will typically have greater untaxed leisure and unpaid work at home and because the two-earner couple will generally have greater work-related expenses. Moreover, Munnell added, having a tax system that differentiates between couples with and without marriage licenses becomes less attractive as long-term cohabitation becomes more common and as income during married years becomes less correlated with lifetime income.

More recently, Kleven, Kreiner, and Saez (2009) have analyzed the question of joint versus individual taxation from an optimal income tax perspective. The authors point out that families with identical wage rates might differ on other dimensions. For example, their secondary earners might face different fixed costs of work or vary in their skill at home production. In a model in which all secondary earners have the same wage level, they analyze whether secondary earners should face any tax at all on their earnings. The authors show that if secondary-earner labor force participation is a signal of households being better off via lower costs of work, there should be a tax on the earnings of secondary earners. In contrast, if secondary-earner labor force participation derives from households being worse off via lower skill at home production, then there should be a subsidy for secondary earners. In their model, they also show that as the earnings level of the primary earner increases, the social welfare value of redistributing between one-earner and two-earner households diminishes, and the optimal tax or subsidy on secondary earners heads asymptotically to zero. In their simulations calibrated to the UK tax system, they mostly find optimal tax rates on secondary earners that are below the marginal tax rates for primary earners, a result that is more in line with independent taxation than with joint taxation.[7] Kleven et al. also observe that the structure in many European countries of a welfare system based on household income and a tax sys-

tem based on independent taxation is consistent with their finding that there should be more interdependence of tax rates at the bottom of the income distribution than at the top.

III.   Analytical Framework and Data

In analyzing the distributional consequences of a shift from joint taxation to independent taxation, we study married households and take the perspective that tax filing units facing the same budget set are equally well off. This leads us to rank households according to their potential income—the income the household would receive if both spouses worked full time.[8] Taxation in either system is based on actual income rather than potential income.

From this potential-income perspective, joint taxation and independent taxation create different inequities. Under joint taxation, a one-earner couple in which one spouse earns $100,000 from full-time work and the other is a nonworking spouse who could earn $40,000 if he or she chose to work full time in paid work is taxed the same as a two-earner couple in which both spouses work full time and earn $50,000 each. The one-earner couple has greater potential earnings (and is consuming greater untaxed leisure and self-produced services) and should be taxed more heavily. Under independent taxation, the one-earner couple would be taxed more heavily than the two-earner couple (assuming a graduated schedule of marginal tax rates).

However, consider a second scenario. Under independent taxation, two spouses who are full-time workers and earn $70,000 and $30,000 will be taxed more heavily than two spouses who are full-time workers and each earn $50,000.[9] In this case, the two couples have the same ability to consume and the same leisure—the same potential income—and they should therefore face the same tax, as would be the case under joint taxation.[10]

To explore these issues in a representative sample of US taxpayers, we build a microsimulation model of the US tax system and examine the distributional implications of moving to independent taxation. We start with raw data from the 2010 NBER TAXSIM model, the latest available when we began this research. These data are largely the same as the Statistics of Income (SOI) public-use file. We augment these data by imputing the share of earnings accruing to each spouse and the hours worked of each spouse using information from the March 2011 CPS, which contains data corresponding to the 2010 tax year. Imputing the share of earnings accruing to each spouse allows us to overcome the fact that the

SOI-based data for married couples provide only the combined earnings of the two spouses. Imputing hours worked allows us to calculate a potential income measure for each household that becomes our main measure of ability to pay. We follow a hot-deck imputation procedure within married-couple earnings deciles: for each married joint tax return we randomly draw an observation from the same earnings decile in the CPS and assign the secondary earnings share and hours worked data from that observation to the tax return.[11] We measure potential income as the sum of household asset income and the earnings that would accrue if each spouse had worked 2,000 hours during the year.[12] The data are aged from 2010 to 2017 by growing each income component at the growth rate of personal income excluding transfers. Our CPS sample is limited to married couples in which both spouses are present and in which both spouses are younger than age 65. Because the age exemption variable is no longer provided in the public-use SOI tax model files, we drop observations with Social Security benefits from the tax file in an attempt to eliminate individuals over 65 from that sample as well. We also drop observations with negative adjusted gross income (AGI) and observations with zero earnings.

To compare joint and independent taxation, we model taxes paid by married joint filers under the 2017 joint tax system as well as the taxes these couples would pay under a reformed system with independent taxation. Our model of the 2017 tax system includes standard and itemized deductions, personal and dependent exemptions, differential tax rates for dividends and capital gains, and the EITC and child credit.[13] We do not model the alternative minimum tax. We discuss our system of independent taxation in further detail below.

IV. Studying the Impact of Independent Taxation in a Simplified, Earnings-Only Setting

To focus on the "pure" effects of a change to independent taxation, it is helpful to start by studying a scenario in which the only component of income is earnings. For this analysis, we use our same microsimulation sample, but ignore all of the components of income other than wage earnings. Since approximately 70% of the income reported on personal income tax returns is wage earnings, this simplified analysis is still quantitatively relevant.

To perform this analysis, we need to select a tax schedule for the independent taxation system. Table 1 presents the 2017 US tax schedules for

Table 1
2017 US Personal Income Tax Brackets

	Married Joint	Married Separate	Single
10	$0–18,650	$0–9,325	$0–9,325
15	$18,650–75,900	$9,325–37,950	$9,325–37,950
25	$75,900–153,100	$37,950–76,550	$37,950–91,900
28	$153,100–233,350	$76,550–116,675	$91,900–191,650
33	$233,350–416,700	$116,675–208,350	$191,650–416,700
35	$416,700–470,700	$208,350–235,350	$416,700–418,400
39.5	$470,700 and above	$235,350 and above	$418,400 and above

married joint, married separate, and single filers. The married separate brackets are half as wide as the married joint brackets. A married couple filing jointly in which both spouses earned the exact same amount would pay the same tax if the two spouses filed separately under the married separate bracket. However, a married couple with unequal earnings would pay more tax if the two spouses filed separately under the married separate bracket because the higher earner would be further into the higher marginal tax rate brackets. Put another way, relative to filing jointly (or a system that permits earnings splitting), there would be unused space in the lower brackets of the lower earner. The top panel of the first figure (fig. 1*a*) illustrates, for different primary-earner shares of total household earnings, the increase in taxes that would occur if a married couple filed separately.

Table 1 shows that the first two brackets for single taxpayers match the brackets for married separate filers, while the others result in lower liability for single filers than for married separate filers. Up until 1969, the US brackets for unmarried single filers were set to be half as wide as the married joint brackets—as the married filing separate brackets are today. This meant that the tax system had exclusively marriage bonuses and no marriage penalties. However, concerns that single filers were paying much higher taxes than one-earner married couples led to the creation of brackets for singles where the widths were between those of married separate and married joint. This resulted in a system in which some couples (those with disparate earnings) had their taxes go down when they married while others (those with similar earnings) had their taxes go up. The last few tax reform acts have been gradually moving back in the direction of having the tax brackets for married couples be twice as wide as those for singles. Marriage bonuses have been growing, and, as of 2018, there are no marriage penalties for any couples with joint earnings below $600,000.
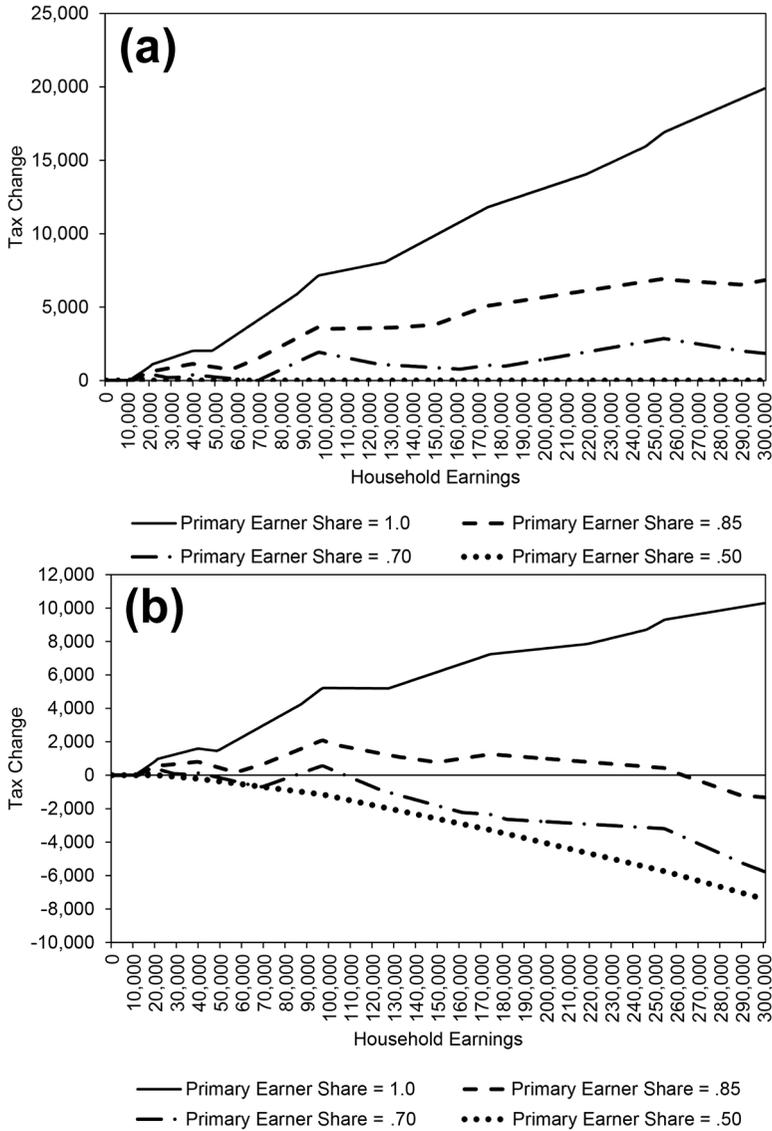
Fig. 1. Change in taxes paid relative to filing jointly by primary earner share of household earnings. (*a*) Married filing separately. (*b*) Independent taxation.

In modeling a system of independent taxation, the most obvious bracket to use is the married separate one that is half as wide as the married joint bracket. However, a switch to that bracket would raise approximately 12% more revenue, assuming no behavioral changes. To keep

the reform revenue neutral, we maintain the married separate brackets but scale down all of the marginal tax rates by multiplying by 0.89. In essence, we convert the inframarginal marriage bonuses of the current system into reductions in marginal rates. In this simplified model, we further assume that each spouse claims one personal exemption and that the standard deduction for the independent taxation system is half of the 2017 married joint standard deduction. We ignore all other exemptions, deductions, and credits. The bottom panel of figure 1 (fig. 1*b*) shows that the change in taxes resulting from the shift to this independent taxation system vary with the primary-earner share of household earnings: one-earner households pay higher taxes, while those in which the higher earner earns 70% or less of the total pay lower taxes.[14]

The impact on horizontal equity of the shift to independent taxation is illustrated in figures 2 and 3. Figure 2 plots average tax rates by income for each married couple in our microsimulation sample, where income is measured as the sum of the actual earnings of the two spouses in the household. Figure 2*a* shows the results for the current system where all married couples are assumed to file as married joint filers. Because the current system assesses taxes based on total income, there is no dispersion in average tax rates at a given level of income (remember that in order to highlight the underlying difference in tax structures, our simplified earnings-only scenario deliberately eliminates all of the other sources of heterogeneity that would lead to heterogeneity in average tax rates at a given level of income). Figure 2*b* shows the result for the independent taxation system. Because the amount of tax paid by the couple varies with the percentage of total earnings that is earned by each spouse, there is now heterogeneity in the average tax rates paid by couples at a given level of total couple earnings. Couples in which earnings are split equally face the lowest average tax rates while one-earner couples face the highest rates. At most income levels, the range between the taxpayers paying the highest average tax rates and those paying the lowest is between 4 and 6 percentage points. If actual earnings were the appropriate basis upon which to rank households, then it would be clear that independent taxation does worse than joint taxation on horizontal equity—as it results in greater dispersion in average tax rates for otherwise similar tax filing units.

Figure 3 shows that this conclusion is far less clear once we switch to potential earnings. For both the joint taxation system (fig. 3*a*) and the independent taxation system (fig. 3*b*) there is significant dispersion in average tax rates. In both systems, variation in hours worked among households
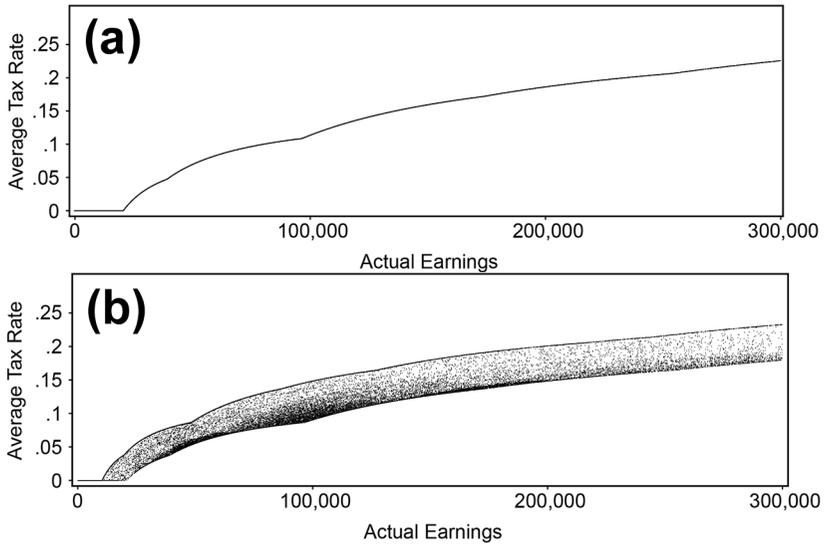
Fig. 2. Dispersion in average tax rates when households are ranked by actual household earnings. (*a*) Joint taxation. (*b*) Independent taxation.
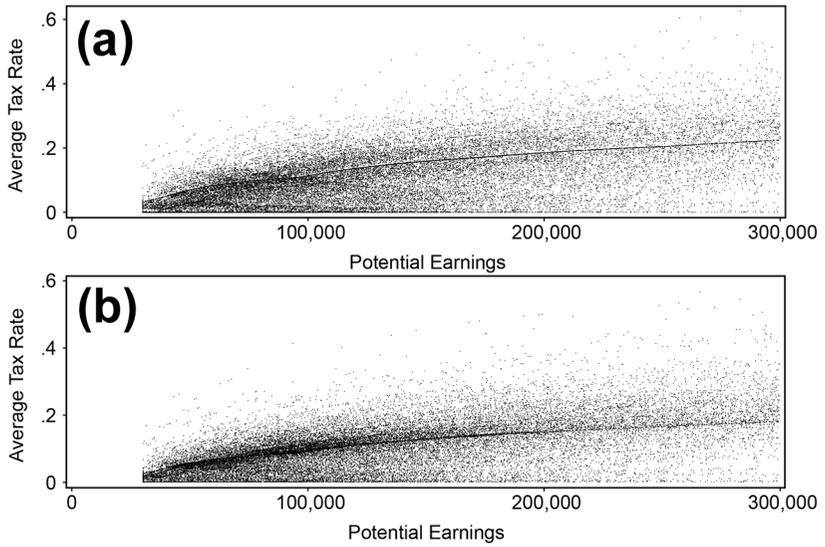

Fig. 3. Dispersion in average tax rates when households are ranked by potential household earnings. (*a*) Joint taxation. (*b*) Independent taxation.

with the same potential income is leading to a wide spread in tax rates. Because leisure/home production is untaxed, households with lower paid work hours have lower average tax rates and those with greater paid work hours have higher average tax rates.

To more formally compare horizontal equity under the two systems, we adopt an approach similar to Auerbach and Hassett (2002). In a utilitarian social welfare framework, there is welfare loss when the tax system causes otherwise equivalent households to have different after-tax incomes. The concavity of the utility function implies that the sum of the utilities will be lower when there is a range of after-tax incomes in a group than when everyone in the group receives the group average after-tax income. We calculate social welfare as

$$W = \left[\sum_i \sum_j (Y_i - T_{ij})^{1-\gamma} / (1 - \gamma) \right],$$

where i indexes groups of individuals with a given level of potential income, j indexes all of the individuals within the income group, and γ is a parameter that can be interpreted either as reflecting the curvature of the utility function (in a strictly utilitarian approach to social welfare) or alternatively as reflecting the social planner's distaste for violations of horizontal equity.[15]

To implement this approach numerically in our data, we take the potential earnings of each observation in our data set and estimate the dispersion in taxes paid at that level of potential earnings using a kernel regression with a normal kernel that weights the taxes paid of each other observation more heavily the closer the observation is to the potential earnings level of the observation for which the dispersion estimate is being calculated. To measure the taxes paid of the nearby observations, we hold constant the hours worked and the fraction of total household earnings earned by each spouse and scale up or down the wage levels of both spouses so that their potential earnings matches the potential earnings of the observation at which the dispersion in taxes is being calculated. Then we calculate the taxes each nearby observation would owe at this scaled wage level. Intuitively, we are obtaining a distribution of hours worked and the share of earnings earned by each spouse at each level of potential earnings by using nearby observations. By calculating taxes paid at the scaled level of wages rather than at each observation's actual level of wages, we avoid confounding horizontal equity and vertical equity.

Once we have obtained the distribution of taxes paid for each level of potential earnings, we calculate the average utility at each level of potential earnings. Next we calculate the level of taxes that would produce that same average utility if there were no dispersion on taxes paid. The difference between this "average utility" level of taxes and the actual average of taxes paid is our dollar measure of the welfare loss stemming from horizontal inequity. By averaging over all of the potential earnings levels in our microsimulation data set, we obtain our aggregate measure of the welfare loss from horizontal inequity. We do this procedure separately for the joint taxation system and the independent taxation system.

Table 2 displays the results of this horizontal equity calculation using our simplified earnings-only framework. We present results for $\gamma = 1$ (log utility) as well as $\gamma = 2$ and $\gamma = 4$. Under joint taxation, the cost of horizontal inequity with $\gamma = 1$ is equivalent to 0.20% of potential income per married couple. Under independent taxation, it is 0.23%. With $\gamma = 2$, the costs are 0.40% for joint taxation and 0.46% for independent taxation, and with $\gamma = 4$, the costs are 0.83% and 0.97%. Thus, the welfare losses associated with dispersion in taxes paid at a given level of potential earnings are small, and the difference between the two tax systems is even smaller. This implies that if there are even small gains from independent taxation on efficiency, simplicity, or other equity dimensions, these gains would likely outweigh the advantage of joint taxation on horizontal equity. Intuitively, at a given level of potential income there are some taxpayers paying taxes above the average for that level of income and some paying below. If utility were linear in consumption, then the net effect would be zero, and there would be no social welfare gains from reducing horizontal equity. With curvature of the utility function, there are net gains to equalizing after-tax incomes, but for the relatively small differences in taxes paid we see in our sample, these gains are small.

While the focus of this analysis is on the equity implications of independent taxation, it is worth noting the efficiency gains that come from

Table 2
Measure of Average Loss from Dispersion in Taxes Paid Simplified Model with Earnings Only (Percentage of Potential Earnings)

	Coefficient of Relative Risk Aversion		
	1	2	4
Joint taxation	.20	.40	.83
Independent taxation	.23	.46	.97

the shift as well. Using the earnings-only microsimulation sample, it is possible to calculate deadweight loss using the standard Harberger-Browning formula. The dollar-weighted marginal tax rate on secondary earners falls from 25.2% under joint taxation to 19.6% under independent taxation. This implies a reduction in deadweight loss (DWL) from taxing secondary earners of 40%. Marginal rates on primary earners rise only slightly from 24.5% to 24.9% (recall that our reform has the effect of converting inframarginal marriage subsidies into reductions in marginal rates, so that reductions in secondary-earner marginal tax rates are not offset with equivalent increases in primary-earner marginal tax rates). If we assume that the secondary-earner earnings elasticity is twice that of the primary earner, then this reform reduces the overall DWL from taxing earnings by 18%.

As explained above, independent taxation makes the tax system marriage neutral, eliminating both marriage penalties and marriage bonuses. Because the current joint taxation system has substantial marriage bonuses on net, the switch to independent taxation produces large efficiency gains from converting inframarginal marriage bonuses into reductions in marginal rates. Some policy makers may not simply aim to eliminate marriage penalties and produce a marriage-neutral system, but may want to subsidize marriage. In a return-free independent taxation system, the Internal Revenue Service could accomplish this by mailing a check to each married couple on the couple's wedding anniversary. Table 3 illustrates the amount of deadweight loss reduction achievable when some of the extra revenue from switching to independent taxation is used to pro-

Table 3
Marginal Tax Rate and Deadweight Loss Reductions with Different-Sized Marriage Credits

	Primary Earner Dollar Weighted Average MTR	Secondary Earner Dollar Weighted Average MTR	DWL Relative to Joint Taxation
Joint taxation	24.5	25.2	1.00
Independent taxation, marriage credit:			
$0	24.9	19.6	.82
$500	25.6	20.1	.87
$1,000	26.3	20.6	.93
$1,500	26.9	21.2	.99
$2,000	27.6	21.7	1.05
$2,298	28.0	22.0	1.09

Note: DWL calculations assume secondary earner elasticity is twice as large as primary earner elasticity. MTR = marginal tax rate; DWL = deadweight loss.

vide a marriage subsidy rather than to reduce marginal rates. With a $500 per household marriage credit, the deadweight loss reduction is reduced from 18% to 13%. With a $1,000 per household marriage credit, the deadweight loss reduction falls to 7%. If all of the additional revenue from independent taxation is used to provide a marriage credit of $2,298, then deadweight loss rises by 9% relative to joint taxation. Even though the simulation assumes that the earnings elasticity of secondary earners is twice as high as that of primary earners, the fact that secondary earnings are only 25% of total earnings means that the impact of the increase in primary-earner marginal tax rates that occurs when none of the incremental revenue is used to reduce marginal rates outweighs the impact of the decline in secondary-earner marginal tax rates and produces higher deadweight loss on net.

V. Studying the Impact of Independent Taxation in a More Comprehensive Scenario

Having clarified the underlying tradeoffs by studying the earnings-only scenario, we now turn to analyzing a scenario with multiple types of income and a more complete independent taxation system. Specifically, we now include child-related benefits, capital income, and exemptions and deductions. Our purpose is to illustrate what such a system could look like and assess whether it is possible to design such a system that approximately preserves the current distribution of taxes paid by income decile. In modeling an independent taxation system, we aim for simplicity and do not aim to precisely calibrate the system to minimize the number of taxpayers who win or lose.

For our illustrative independent taxation system, we need to specify how we tax earnings and income from capital, as well as what child-related tax benefits to provide and how deductions will be handled.

A.   Taxation of Earnings

As in the simplified, earnings-only, model, we begin with the 2017 married filing separate tax schedule with each bracket half as wide as the married joint brackets. We include a zero bracket that is the value of a single personal exemption ($4,050) plus half the married filing joint standard deduction ($6,350). As we did in the earnings-only model, we reduce the marginal rates proportionately so that the total tax collected on earnings equals that under the joint taxation system.

B.   Taxation of Income from Capital

We assume that all income from capital—dividends, interest, and capital gains—is taxed at a flat 23% rate. The flat rate would facilitate withholding at source and make the distribution of capital income across spouses irrelevant. This approach results in higher taxes on dividends and capital gains and lower taxes on interest than in the current system. The assumption is that this approach would be accompanied by a more symmetric treatment of interest and dividends at the corporate level. This rate would also be an increase for lower-income taxpayers who currently have the returns to their savings taxed at a lower rate. If policy makers wanted to hold retired taxpayers harmless from this change, they could do so by providing a small increase in Social Security benefits. If policy makers wanted to offset the impact of this policy for younger taxpayers, they could do so by making matching payments into retirement savings accounts.

C.   Deductions

In the current US tax system, the amount a taxpayer saves from a deduction is proportional to the taxpayer's marginal rate. A $100 deduction is worth $15 if the taxpayer is in the 15% marginal tax bracket and $35 if the taxpayer is in the 35% tax bracket. Many analysts have proposed substituting tax credits for tax deductions so as to provide equal tax savings at different levels of income. In a return-free system in which taxes on earnings were collected through exact withholding and taxes on capital were collected at source, there would be no 1040 tax form to report deductions on and no direct way to have the value of deductions vary with income. Instead, subsidies for activities such as charitable giving, mortgage interest, and state and local taxes paid would be at a flat rate, independent of income. This would have a distributional effect similar to converting deductions into credits. Instead of millions of taxpayers reporting deductions on their tax returns, charitable organizations, mortgage lenders, and state governments could simply report aggregate payments received (or taxes paid) and receive the tax subsidy directly from the federal government, greatly reducing reporting requirements for individuals. In our independent taxation simulation, we model the curtailing of deductions as a tax credit equal to 15% of the household's itemized deductions in excess of the standard deduction.

D. Child-Related Tax Benefits

We replace dependent exemptions, the EITC, the child credit, and child-care deductions with a $1,000 per child benefit that would be paid to each family independent of income. $1,000 per child is approximately the value of the $4,050 dependent exemption in the 25% bracket. In the current system, the EITC and child credit provide no benefit to a household without earnings and phase in as a household's earnings increase. In a system with a child benefit independent of income, even households with no earnings would receive the benefit, so the child benefit would not only replace the existing child-related provisions in the tax code, it could also replace a portion of Supplemental Nutritional Assistance Program and Temporary Assistance for Needy Families benefits as well. To avoid large losses from this reform among the EITC population, it would be necessary to supplement this proposal with a separate income-related process for applying for the EITC. The United Kingdom has used such a system for its EITC equivalent. In our modeling, we assume that all EITC recipients with an EITC amount greater than $1,000 receive the difference between their EITC amount and $1,000 from this supplementary program.[16]

   We present two sets of results from our simulation exercise. The first shows how the distribution of the tax burden by income level changes from the reform. The second shows the distribution of tax increases and tax cuts under the reform. Our analysis is performed at the married couple level; under independent taxation we calculate the separate tax due from each spouse and then aggregate back to the couple level for comparison with the existing joint tax system.

E. Vertical Equity

Given that there are several free parameters to be set in designing the system of independent taxation (including the width of the tax brackets, the tax rate on capital income, the rate at which deductions will be permitted, and the generosity of child benefits), one would expect that it would be straightforward to find a set of parameters that can approximately match the distribution of the current tax burden by income percentile. Only if the separate allocation of wage earnings had widely disparate impacts at different parts of the income distribution would this not be the case.

Table 4 shows that our rather arbitrary set of parameter choices comes quite close to matching the current distribution of the married couple tax burden.[17] Columns 1 and 2 show the percentage of taxes paid by each potential income decile under both the current joint taxation system and under the hypothetical independent taxation system. In both systems, the top two deciles pay between 68% and 69% of taxes, and the percentage paid by each decile is quite similar under the two systems. Columns 3–7 show the distribution of tax changes that would occur within each tax decile from a switch to independent taxation. For the median taxpayer within each decile, the change is negligible. In most deciles 80% of taxpayers would experience a change in average tax rates of less than 3 percentage points.

The lesson of these results is that a shift to independent taxation does not create any insuperable problems with regard to vertical equity. Even with an arbitrary set of parameters for the new system, we have come quite close to matching the distributional burden of the current tax system by AGI decile. By tinkering with the parameters further, it should be possible to mimic the current distribution of the tax burden even more closely.

F.   Annual versus Lifetime Perspectives

The analysis in this paper has taken an annual approach to assessment of horizontal equity. This is likely to be an upper bound on the actual

Table 4
Vertical Equity and Average Tax Rate Changes from Shift to Illustrative Independent Taxation System

Decile	% Total Taxes Paid		Change in Average Tax Rate (Percentage Points)				
	Current (Joint Taxation) (1)	Reform (Independent Taxation) (2)	10th Percentile (3)	25th Percentile (4)	Median (5)	75th Percentile (6)	90th Percentile (7)
1	<0	<0	–2.8	–1.0	.0	1.5	3.1
2	.9	.9	–2.0	–1.5	–.3	1.4	3.0
3	2.0	1.9	–2.1	–1.6	–.6	1.0	2.4
4	3.2	3.1	–2.0	–1.4	–.4	1.1	2.3
5	4.2	4.2	–1.9	–1.3	–.3	1.2	2.4
6	5.5	5.6	–2.0	–1.3	–.6	1.4	2.7
7	6.9	7.1	–2.2	–1.3	–.3	1.5	2.8
8	9.3	9.5	–2.5	–1.5	.1	1.6	2.8
9	13.1	13.5	–2.4	–1.4	.3	1.9	2.9
10	55.5	54.7	–2.9	–1.5	.2	1.9	3.3

amount of horizontal inequity because some of the variation in hours of work and wage levels results from different people being at different points in the life cycle. For example, if every household had a secondary earner who reduced labor supply for several years for childcare purposes, this would show up as variation across households in hours worked in an annual cross-sectional analysis that contains workers of different ages, but there would be no actual difference in hours worked if it were possible to compare lifetime hours worked. It is unclear how a lifetime perspective would affect the relative horizontal equity of joint versus independent taxation. Conceptually, it is likely that the single-year approach overstates the advantage of joint taxation in accounting for positive assortative mating, and it overstates the advantage of independent taxation in accounting for variations in hours of work.

VI.   Conclusion

Because it produces marriage neutrality and low marginal tax rates for secondary earners, and would facilitate return-free filing, independent taxation has long been seen as an attractive alternative by some analysts. But detractors have complained that such a system is inequitable because households with the same incomes but different allocations of earnings between the two spouses would pay different amounts of tax. We have shown that when viewed from a potential earnings perspective, an illustrative independent taxation system and the current personal income tax system do not differ much in aggregate horizontal equity. Independent taxation is more equitable in the treatment of households with different amounts of labor effort while joint taxation is more equitable in the treatment of households with the same labor effort but different spouse wage levels. Given the relatively small differences between the two systems in horizontal equity, the other benefits of independent taxation are likely to outweigh the horizontal equity cost—a result that a large share of developed countries appear to have already figured out.

Endnotes

1. There are two main types of alternative filing systems (US Treasury 2003). In an "exact withholding" system, the tax agency ensures that the correct amount is withheld throughout the year. In a "tax agency reconciliation" system, the tax agency prepares tax-

payers' tax forms based on information provided from various sources. In this paper, we use the term "return-free filing" to refer to exact withholding systems.

2. The United Kingdom, for example, maintains a deduction for charitable contributions. Taxpayers make a payment to a charity that is 80% of their intended gift and the charity files with the government to receive the remaining 20%. From 1983 until it was eliminated in 2000, the United Kingdom's home mortgage interest deduction was administered at source. The borrower paid the lender a reduced interest rate reflecting the subsidy paid by the government to the lender.

3. Horizontal equity refers to whether individuals or households equally situated pay equal taxes, while vertical equity refers to the distribution of taxes across individuals or households at different income levels.

4. The UK Income and Corporation Taxes Act of 1970 specified that "A woman's income chargeable to tax shall . . . be deemed to be her husband's income and not her income" (Adam 2018).

5. A 1984 European Commission memorandum (European Communities 1985) concluded that "a system of totally independent taxation is to be recommended from the point of view of achieving equal treatment [of women]."

6. As discussed below, the 1969 tax act widened the brackets for single filers, introducing marriage penalties for some filers as well as higher marginal tax rates for secondary earners. The high marginal tax rates on secondary earners have been criticized as unfair to women by authors such as McCaffery (1999) and Durana (2017).

7. A secondary-earner deduction in a joint taxation system would be an alternative way of reducing marginal rates on secondary earners. See Kearney and Turner (2013) for a recent proposal along those lines.

8. See Fullerton and Rogers (1993) for a description of the potential income approach. While we acknowledge the point made by Kleven et al. (2009) that households may vary on dimensions other than their potential earnings and that observed earnings may contain information about these other dimensions, in practice our data do not contain information on fixed costs of work or skill in home production, so we stick to the conventional approach of evaluating the distributional consequences of a tax reform in a framework where heterogeneity comes from differences in labor productivity (wages).

9. To be precise, this example assumes that marginal rates rise either between $30,000 and $50,000 or between $50,000 and $70,000 or both.

10. In some models, different wage levels between spouses provide opportunities for specialization that are not available to spouses with equal earnings. In assuming away that feature, the analysis below understates the gains to independent taxation, since independent taxation taxes more heavily the "better off" family with disparate wages.

11. Annual hours worked are calculated from the CPS by multiplying usual weekly hours by weeks worked.

12. For nonworking spouses (for whom we do not observe wage levels), we impute their wage level using a simple wage regression with education categories, age, and age squared as explanatory variables. We impose a lower bound on wages at the federal minimum wage of $7.25 per hour.

13. Because the personal income tax changes implemented in the December 2017 budget reconciliation law are temporary, we chose to do our analysis relative to the 2017 income tax provisions so as to keep our analysis relevant for the long term.

14. At higher household earnings levels than those shown in the figure, even one-earner households receive a tax cut under independent taxation, as the tax savings from lower marginal rates eventually outweigh the increase in taxes from narrower inframarginal brackets.

15. Kaplow (2000) argues that horizontal equity's main value is as a proxy for potential welfare gains from equalizing marginal utility among similar individuals.

16. In 2017, the maximum EITC was $3,400 for tax filing units with one child, $5,616 for tax filing units with two children, and $6,318 for those with three children.

17. Note that the married couple tax burden is skewed more to higher percentiles than is the overall tax burden.

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