WHAT MAKES A GOOD TAX STRUCTURE?

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1. INTRODUCTION

Have you ever looked at Chapter 143 of Title X of the Missouri Revised Statutes? This chapter applies to individual and corporate income taxes. Rather than go through a list of each subsection, we collected data on the number of subsections in Chapter 143 from 1973 through 2012. We plotted the number of effective subsections for each year in Figure 1. Clearly, things have changed over time, with the number of subsections increasing from 54 in 1973 to 154 in 2012.[1]

The next question is, why have the number of subsections in Chapter 143 of Title X increased? Several possible answers apply. For one thing, no law is ever written perfectly the first time. So, new subsections refine things, such as loopholes that were not evident when the law was initially written and to redefine what income is subject to taxation.[2] Additionally, the state assembly sees opportunities to use tax laws that seek to stimulate economic development by changing the amount of income subject to the state income tax. By implementing such changes, the carrot-and-stick approach aims to modify people's behavior so that the Missouri economy will grow faster.[3]

Third, if we started from scratch, would we implement the same set of subsections? The calls for tax reform are based on the notion that tax code becomes unnecessarily complicated over time. The view is that the number of laws that adjust taxable income changes over time complicate things by altering the

FIGURE 1: Effective Subsections per Year
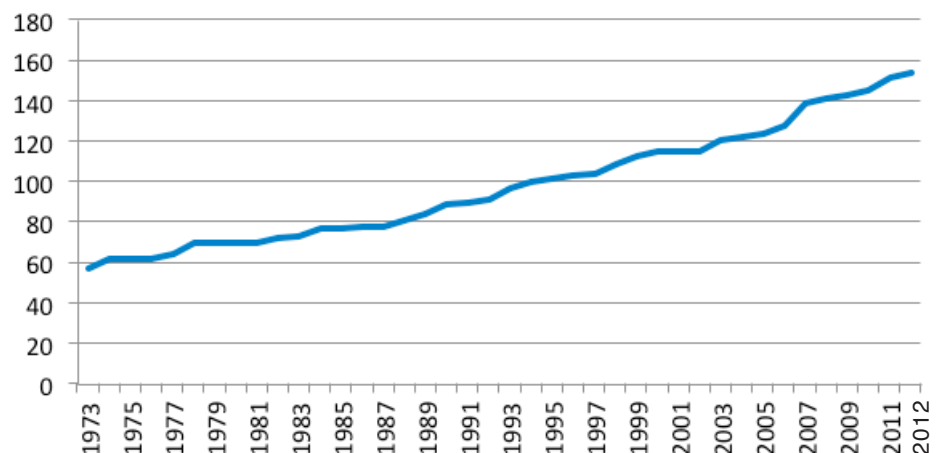
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set of deductions, exclusions, and credits that apply to taxpayers.[4] Each filer must keep up in order to comply. Each new subsection adds a layer of new questions that taxpayers confront when filing their taxes. Do I qualify for the new tax credit? Does the new deduction apply to me? On the other hand, the filer risks either not complying or paying too much in taxes if he ignores new tax laws.

We have moved systematically through three questions. At the end, there is a case to be made for tax reform, if nothing else, to reduce the complexity and save people time. Tax reform, however, is not limited to dealing with the complexity issue. Indeed, it is also a good time to ask, what kind of taxes do the least harm to Missourians?

The purpose of this essay is to focus on the economics of taxation. Specifically, we are interested in characterizing those principles that implement taxes that do the least harm to people. In order to accomplish this goal, we study two specific policy prescriptions. As we examine each policy, one will see a single doctrine that accomplishes two goals: it helps us see how taxes are harmful and therefore, why more desirable tax policies do less harm. In each policy prescription, we avoid the problem of deciding how much the government will spend. We assume that the spending decision is already made so we only need to examine which set of taxes will provide the necessary revenue and do the least harm.

The guiding idea is that doing the least harm means creating the smallest distortions. Because tax increases affect after-tax prices, the smallest distortions occur when the elasticity of either demand or supply is smallest. At the end of the day, the elasticity principle serves as the overarching guide for choosing the tax policies that are the least harmful.

The policy prescription starts with the premise that income must be taxed. We then ask whether all sources of income are the same. In this case, we follow the work that Christophe Chamley (1986) and Ken Judd (1985) conducted separately. Independently, both authors derived the same result. They started by dividing income according to its source. Labor income is paid for the work effort that a person puts forward. Capital income is paid to people for the resources they provide so that companies can purchase buildings and machines used to produce goods and services.[5] Chamley and Judd asked if there should be different tax rates to these two different sources of income. Each found that the best policy is to set the tax rate equal to 0 on capital income and that the tax rate on labor income is high enough to generate all the government's revenue.

Recently, we saw a state implement income tax reforms that are similar to what Chamley and Judd suggested. In 2012, Kansas implemented reforms that eliminated taxes on income paid to owners of sole partnerships, limited liability corporations, and S corporations as long as the income is pass-through and not paid as wages. We will discuss the differences between the Kansas income tax changes and the Chamley-Judd prescription. In addition, we consider a numerical illustration that supposes the income taxes in Missouri if it implemented the Chamley-Judd prescription.

The key insight from Chamley and Judd is really an application of a more general principle that Nobel Laureates Peter Diamond and James Mirrlees put

forward. In their famous 1971 paper, the principle of elasticity was developed. Diamond and Mirrlees demonstrated that the taxes that did the least harm were ones that were applied to the least elastic items. Here, the term elasticity refers to the percentage change in the quantity of the good or service for a given percentage change in the tax rate.[6] Chamley and Judd showed that capital is extremely elastic because it is mobile. In the long run, a higher tax rate on capital will lower the return and result in capital fleeing to a lower tax jurisdiction.

Our second illustration considers extending the principle of elasticity to its logical conclusion. Land is an item that is completely inelastic; you cannot remove a parcel of land from one state to another. Therefore, land value constitutes a tax base that is inelastic and warrants consideration as a taxable item that does the least harm to Missourians. We use the best data available to determine the tax rate that would apply in Missouri if it sought to implement a land-value tax.

The outline of the paper is as follows: In Section 2, we lay out the economy that Chamley and Judd studied. In doing so, we offer a more precise definition of what we mean by the phrase "least harm." We conduct our numerical experiment for the Missouri economy in Section 3. We relax the assumption that income must be taxed in Section 4, proposing a tax on land value as an alternative. Section 5 offers a brief summary of our findings.

2. The Model Economy

A model captures the key features of the actual economy. Here, three main tradeoffs are captured: (1) people make decisions within each year between working, which is costly, and consuming, which requires, in part, the income from working; (2) people make decisions about consuming this year versus consuming in the future; and (3) firms decide how intensively to use capital and labor. Clearly, this is not an exhaustive list of decisions, but it embodies key dimensions that matter for economic well-being. In particular, item 2 is a fairly straightforward way to capture the dynamic effects associated with people's consumption-saving decision. People look into the future to properly capture this tradeoff.

We begin by describing how this economy works. For example, we need to describe who lives in the economy, how long they live, and what kind of things they want to buy and sell.

How long does this economy last? We only need two periods in order to get the consumption-saving decision to be operational. In order to get a sense of the long run, however, we think of this economy as lasting for a long time. This length of time is divided into periods. For our purposes, each period is a year. When we get to the analysis, the nice thing is that the decisions are easily characterized as if it is about consumption this year and consumption next year. So, any graph has only two dimensions.

Who lives in the economy? The number of people is very large so that no one person possesses any market power. Put another way, each person takes prices as if they are given and cannot implement any unilateral decision that will affect those prices. We do not need to have an exact number, because we will assume that people are identical, at least with respect to their decisions regarding current consumption (this period) and future consumption (next period). In addition, everyone lives for two periods.

Labor income is paid for the work effort that a person puts forward. Capital income is paid to people for the resources they provide so that companies can purchase buildings and machines used to produce goods and services.

In 2012, Kansas implemented reforms that eliminated taxes on income paid to owners of sole partnerships, limited liability corporations, and S corporations as long as the income is pass-through and not paid as wages.

What goods exist in this economy? We start with an economy that has three goods: a consumption good that spoils each year, leisure, and capital. There are more than three goods in the world, but this approach allows us to capture some key elements without keeping track of all the variety. For the consumption good, spoilage simply means that whatever consumption goods are produced in a given year must either be consumed or turned into capital. Otherwise, the consumption good rots and people derive no happiness — further known as utility — from consuming rotten goods. Often, a person's favorite fruit is used as a metaphor for the consumption good. Fruit ripens and then spoils. In this parable, the fruit's ripe phase coincides with the length of a period.

Leisure is time spent enjoying life. Each person is allotted one unit of time each period. The unit could be 24 hours, one week, one month, one quarter. Again, the length of the period does not matter and will not affect the results of our analysis. Rather, the length is converted into a fixed length and then normalized to one. That amount of time is divided between working and time off. By creating leisure, we can consider the tradeoff each period between consuming and working. Working means that we give up leisure so working is costly. However, consumption is tied to labor income, so if our person does not work, he will suffer less consumption. When decisions are made, the balancing act is between the cost of giving up a little of the consumption good and the benefit of enjoying a little more leisure.

In order to consider the tradeoff between consuming this year and consuming next year, we need an asset that allows us to store value across years. Here, that good is capital. Capital serves two purposes: it is an input into the production process and the means of saving for future consumption. We assume that the consumption good can be converted into the capital good. To build on the fruit-as-consumption-good metaphor, before the fruit spoils, it can be planted. The seed matures in the future, yielding more consumption good. Likewise, the consumption good is converted into the capital good where the latter good returns quantities of next-year consumption goods. We assume the conversion rate of the consumption good to the capital good is one-for-one. It does not have to be so, but the assumption simplifies the math. Across time, the decision must balance the cost of giving up a little bit of the consumption good this year against the benefit of being able to afford a little more of the consumption good next year because production expanded with the capital stock.

Next, we describe the process that transforms capital and labor into the current-period consumption good. This technology is called the production function. Production combines labor and capital to generate the consumption good. As we previously wrote, capital is created by converting the consumption good into capital; more specifically, before the consumption good spoils, a person can change this year's consumption into capital that is used in next year's production. When combined with next year's labor, we get the quantity of the consumption good specified by the production function. The market allows savers to rent their capital to companies while people are employed. To extend the consumption good-as-fruit analogy, a person saves part of the fruit and plants it. Next year,

FIGURE 2: What Decisions People Make and How Those Decisions Are Linked Across Time
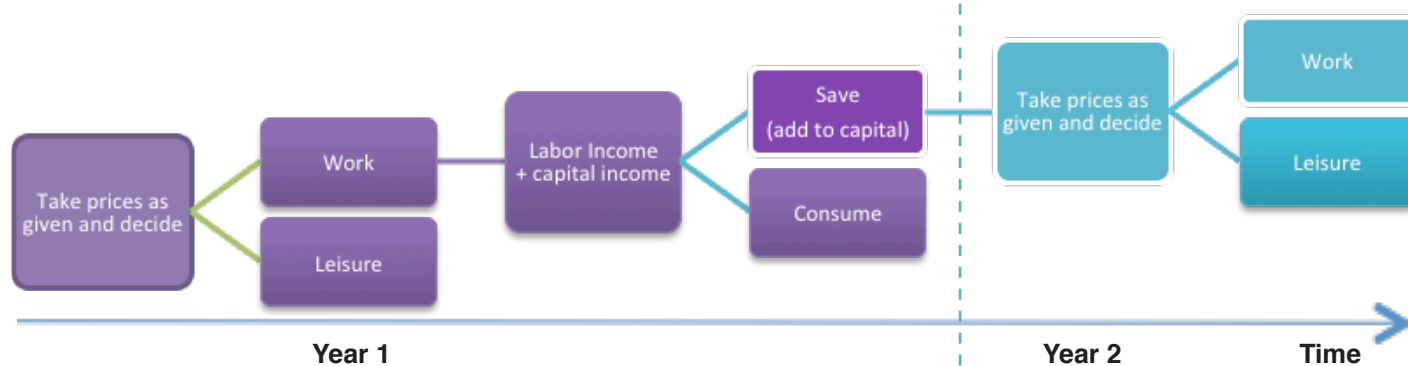
new fruit is available and by applying labor to harvest, new fruit is available for consumption. Additional inputs yield additional output. We further assume that the gains from additional inputs occur at a decreasing rate, or each input exhibits diminishing marginal product.

The final piece involves a specification of what people want. We assume that each person has a utility function which describes the relationship between happiness and the quantities of the consumption good and leisure. More is preferred to less so that happiness increases, for example, with an increase in the quantity of the consumption good. Similarly, happiness increases, for example, with an increase in leisure. The rate at which happiness increases, however, diminishes with additional quantities of the consumption good and leisure.

You may ask why people do not get happiness from capital. Capital is not consumed; rather, it is a stand-in for future consumption. Therefore, happiness is indirectly tied to capital quantities. With a description of the time, length of life and goods and services together with the endowments, the technology, and people's preferences, we have a complete

description of the things that make this an economy.

Figure 2 provides an overview of the connections that exist between decisions across two different dates. In the current period, a person decides between labor to offer and capital to rent. Payments to each of these two factors result in income that is then divided between current consumption and saving. The amount a person saves is used to create additional capital, also known as investment. Next period, the amount of capital brought forward from the current period is used, along with labor to generate income. This process continues ad infinitum.

One can use Figure 2 to characterize how decisions are made each year and how those decisions affect outcomes across years. In the leftmost purple box, people decide how to allocate their time, assuming that any one person's decision does not affect the wage they are offered. Based on this knowledge of prices, the person decides how much to work and how much to enjoy leisure (the boxes just to the right). Now with their labor income and the capital income generated by capital accumulated last year, each person knows their income, which is the next box. The income is divided into how much to consume and how much to

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save. Here, saving is the act of adding to the capital stock that will be carried over to next year and used in the production process. This is where we jump from one year to the next, indicated by the boxes changing from purple to blue. And the decision process repeats.

Overall, Figure 2 depicts a decision process that has two key elements. First, there is the decision each year about how much to work and how much to enjoy leisure. This decision affects income this period. Second, there is the decision about how much to consume and how much to save. The second decision affects income next period through the accumulation of additional capital this year, which generates income next year. So, both elements bear on income and on consumption. Working more results in more current-year income, but means forgoing leisure. To save more, we see an increase in next-year income, but this means forgoing this year's consumption. Together, these two elemental decisions are the driving forces that affect a person's lifetime welfare.

2.1 What Income Should We Tax?

Suppose that we have to tax income. The decision is whether there is an important difference between labor income and capital income. If no, then the case can be made that we want to tax both types at the same rate. However, if there is an important difference, we at least want to consider whether the tax rates on the two types should be different.

We begin by considering a tax rate applied to labor income and capital income. When income is the tax base, the underlying assumption is that both labor income and capital income are taxed at the same rate. Following Judd (1985) and

Chamley (1986), we relax the assumption that both types of income are taxed at the same rate, asking what rate, or combination of rates, is best.

To do this analysis, we use the economy described earlier. Both Judd and Chamley did this. The objective is to choose the policy combination of labor income tax rates and capital income tax rates that will result in the highest welfare level for our typical person. Throughout this paper, we adopt the idea that maximum welfare is what we mean by "best" when referring to tax policy. Equivalently, the welfare-maximizing policy is the one that does the least harm.

Suppose a government has access to two distinct tax bases: capital income and labor income. Each can have its own tax rate. Capital income is the return that a person gets from renting capital to companies. Examples of capital income include proprietor's income, rental income, corporate profits, and net interest payments. More concretely, payments are made to people providing resources to companies that are used in the production of market goods and services. Frequently, these resources are acquired through sales of bonds, loans, and selling ownership to people. Therefore, we measure the flow of payments on debt and equity — that is, interest payments and dividends — as compensation for the resources offered to companies. In the case of sole proprietorships, it is reasonable to think of the financing the owner offers as renting capital to the company. The profits from the company are the flow of payments that the capital generates. Labor income is the payment made for work effort that is employed in the production of goods and services. We are most familiar with labor income

because the majority of people's income is derived from applying their labor and earning a paycheck.

In this analysis, we assume the government spends a fixed amount. So, what is the best way to finance these expenditures? As we mentioned previously, the definition of best is the set of taxes that maximizes welfare. Start with the observation that both the labor income tax and the capital income tax affect the after-tax prices of labor and capital. For example, an increase in the labor income tax rate means that for a given pre-tax wage, the after-tax return to labor declines. With a smaller after-tax income, people would be able to afford less of the consumption good. Because more is preferred to less, the bottom line is that welfare declines. So, we are looking for the tax rates that do the least harm to people.

We have the question that Judd and Chamley asked and the methodology they used to answer the question. They separately found the same answer: in the long run, the best tax policy is to set the tax rate on labor income to raise exactly the revenues the government sets. The implication is that the tax rate on capital income is 0.

Principle 1: Given an income tax, the welfare maximizing policy sets the tax rate on labor and the tax rate on capital so that the marginal cost of an incremental increase in the tax rate is equal for each income tax rate.

Principle 1 gives us the guide for setting tax rates. Suppose you raise the labor income tax rate by 1/100th of a percentage point and a person's welfare decreases by 10 units. Consider an increase in the capital income tax rate equal to 1/100th of a percentage point, which results in welfare

decreasing by 50 units. Which tax policy will do the least harm? In this example, a benevolent government would raise the labor income tax. Judd and Chamley are essentially doing this comparison when they find that collecting revenue from labor taxes only is the policy that does the least harm to people.

Why? In the long run, capital is mobile, which means that a small change in its price causes a very large change in the quantity of capital employed in an economy. Economists use the term elasticity to refer to the responsiveness in the quantity to a given change in price. In other words, the long-run supply of capital is very elastic. To see how this works, we need to know that the relevant return to capital is the after-tax return. Moreover, in the long run, the after-tax return is inversely related to the capital tax rate. So, if the tax rate on capital increases, for example, the after-tax return goes down. Even a minimal increase in the capital income tax rate means that people dramatically decrease the amount of capital they are willing to supply to the market. Indeed, the decline in the capital income tax base is sharp enough that a policy that chooses between labor income taxes and capital income taxes will choose only labor income taxes.

Because this concept is central to the economic principle of taxation, we go a little further to provide the intuition behind Judd's and Chamley's result. Each person decides how much labor to offer and how much capital to use in the production process. By raising the tax rate from 0 to 10 percent on labor income, the labor supply is reduced because the after-tax wage has decreased and leisure has become cheaper. So people opt for more leisure. The effect that the tax-rate change

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has on the quantity of labor measures the social marginal cost of the labor tax. In the case of a change in the capital income tax rate from 0 to 10 percent, the decline in capital supply is much larger than the decline in labor supply. The social marginal cost of raising the tax rate on capital is greater than the social marginal cost of raising the tax rate on labor. (Social marginal cost measures the change in the cost the entire society bears for a given change in the tax rate.) Following Principle 1, the best policy chooses the tax policy that minimizes the social marginal cost. The social marginal cost of an increase in the capital income tax rate is simply always greater than the marginal cost of raising the labor income tax. Therefore, we always opt for raising the labor income tax and avoid raising the capital income tax.

2.2 Sales Tax vs. Income Tax

In a 2010 Show-Me Institute Essay, Casteel and Haslag conducted a numerical analysis studying the effects of a state income tax versus a state sales tax. Specifically, Casteel and Haslag asked whether the average person would prefer to raise state revenues using only a sales tax or the current combination of income taxes and sales taxes.

The results indicated that the sales tax-only option would result in greater happiness. Casteel and Haslag used a slightly different model economy to generate these results. The intuition is the same, however. The sales tax was preferred over the current policy of combined sales and income tax because the income tax was applied to capital. The numerical results, therefore, provide quantitative support for the conclusions that Judd and Chamley reached. Capital income taxes do more harm than good.

2.3 Why Is It Hard To Get Rid Of Capital Income Taxes?

Measurement issues complicate the 0 rate policy on capital income. When measuring capital income, there is the unambiguous part: rental income, corporate profits, and net interest income match well with the concept of capital income as developed in the models. The value of land and inventories are lumped into the model's notion of capital. Data on land values and inventories are included in the Flow of Funds accounts. One sticky issue, however, is how to treat Proprietor's income. Small business owners, for instance, are almost always materially involved in the business operations; that is, they work. There is no neat way to divide their compensation into a labor part and an owner's part.

Some apportionment of proprietor's income must be designated as labor income and the remainder as capital income. Such a one-size-fits-all approach is not very appealing. One could try to ask the taxpayer what their two types of income are. You can expect that the share will depend on the differential between the labor income rate and the capital income rate.

2.4 The Kansas Approach

In 2012, Kansas implemented changes to its state income tax laws. Specifically, income that sole proprietors, partnerships, limited-liability corporations, and S corporations report are not subject to state income taxes. These types of businesses are more closely associated with individual or a small group of owners. The net income of businesses organized under these legal headings is passed through to the owners and are subject to taxation under the individual income

tax laws. In contrast, C corporations will declare their net income and be subject to corporate income taxation.

Essentially, Kansas implemented a law that allows business owners under these four legal headings to choose their own division of income. Suppose there is a two-person law firm in Kansas that is set up as a partnership. The firm generates $500,000 in revenues and has expenses equal to $200,000. The partners split, or pass-through, the $300,000 equally. Each partner then files his individual income tax form and the $150,000 income is not subject to Kansas state income taxes. If instead, each partner paid himself a salary equal to $150,000, then each person would receive a W-2 from their partnership and those wages would be subject to Kansas income taxes. Which option do you think the two partners will choose?

The point is that Kansas has effectively implemented the 0-capital-tax-rate policy, but only on a portion of capital income. According to Principle 1, there are two shortcomings to the Kansas income tax law. One is that it differentially treats capital income that C Corporations generate and capital income paid to other types of business organizations. As such, the new Kansas income tax does not apply Principle 1 in the best possible way. Principle 1 does not distinguish between types of business organizations, specifying that the capital income tax rate should be 0 across the board.

Second, Kansas failed to make any provision for labor income that owners of the four "special" types of business organizations earn. According to Principle 1, labor income taxes are not as harmful as capital income taxes. By allowing owners to choose the income classification —

whether they earn labor income or not — means the individual income tax base is smaller than what economic theory suggests. In our attorney partnership example, each partner is applying some effort to produce legal services. Accordingly, Principle 1 would seek to identify the appropriate amount of payment to each lawyer's work effort and apply the labor income tax to that amount. To implement the optimal income tax policy, we need to properly assign the payment to labor. Of course, this assignment creates a measurement problem that requires thought to solve.

There also is a strategic consideration that Kansas law unleashed. It may be only a theoretical curiosity, but there is an incentive for each person to form his own business. Imagine that you can declare yourself a sole proprietorship and that you consult with the company for which you work. Suppose you negotiate the same compensation package, benefits and all, with the company so that you are indifferent between being an employee or being a self-employed consultant.[7] So, with everything else being equal, a sole proprietor could declare compensation as pass-through income and avoid paying taxes. We are not predicting wide-scale shifts in the Kansas labor force, but incentives matter.

Overall, we specify a model of the economy and use it to compare the effects of different tax rates. If the choice is between labor income and capital income taxes, the least harmful option is to tax labor income only. The deeper point is that least harm means that the least elastic items are taxed. In other words, find items/tax bases that do not respond very much, or not at all, to changes in prices that changes in tax rates induce.

Casteel and Haslag asked whether the average person would prefer to raise state revenues using only a sales tax or the current combination of income taxes and sales taxes. The results indicated that the sales tax-only option would result in greater happiness.

3. What If Missouri Implemented A No-Capital-Income Tax Rate?

Here, we consider a numerical example in which we ask what it would look like if Missouri were to implement a modification to its individual income tax. Specifically, suppose state law distinguished between labor income and capital income. Further, suppose the state chose the tax rate on labor income so that revenues are neutral; that is, monies the "new" income tax policy raises are equal to those the existing individual income tax raises.

3.1 Taxing All Labor Compensation

Missouri's General Revenue Fund received $5.986 billion from individual income tax in 2012, the last calendar year for which we have data.[8] This figure is the net receipts so refunds are already subtracted. We use this amount as the target level of receipts that the labor-income-only state income tax needs to generate.

Missouri's Gross Domestic Product (GDP) measures the total payments made to both capital and labor that are employed within Missouri's borders. In 2012, Missouri GDP was $258.832 billion. Next, we need to break out the total payments into the labor portion and the capital portion. Using data from compensation sources, researchers have settled on payments to labor typically accounting for 60 to 70 percent of total factor payments. If we choose 60 percent, we are effectively making the labor-income tax base as small as possible. We compute the product of Missouri GDP and 60 percent — $258.832x0.6 — which equals $155.299 billion. For this indirect analysis, we use $155.299 billion as the labor-income tax base. Note that

this measure of labor income includes all forms of compensation for hours worked, including benefits. We start with this broad measure and later conduct our analysis with just wage-and-salary, or take-home, pay.

The last step is to solve for the rate that would yield the same level of individual income tax as Missouri collected in 2012. The calculation involves computing the ratio of Missouri's individual income tax receipts to Missouri's labor-income tax base. In this case, $\frac{\$5.986}{\$155.299}$ = 0.0385. In other words, Missouri could set the labor-income tax rate at 3.86 percent and generate the same tax receipts as it does under the current individual income tax.[9]

Suppose the goal is to replace the revenues from individual and corporate income taxes that Missouri collects. In 2012, net receipts were $6.424 billion. Following the same procedure as we did earlier, the rate would be $\frac{\$6.424}{\$155.299}$ = 0.0414. Thus, the numerical example indicates that Missouri could replace its current income tax law with a tax on labor income only and the rate equal to 4.14 percent would achieve revenue neutrality.[10]

We used a conservative estimate of the labor income value in Missouri. Our numerical analysis shows that a labor-income tax could replace the current income tax structure. The tax rate on labor income set at 4.14 percent would yield the same revenue as current individual and corporate income tax structure. Alternatively, if labor income accounts for 70 percent of the payments made to Missouri workers, then the tax base increases to $181.182 billion. Correspondingly, the tax rate is $\frac{\$6.424}{\$181.182}$ = 0.0355. The tax rate is 3.55 percent if labor income in Missouri accounts for

We consider a numerical example in which we ask what it would look like if Missouri were to implement a modification to its individual income tax.

70 percent of GDP. What should not be lost in these calculations is Principle 1; the typical person has higher welfare under the labor-income tax-only policy than under the general income tax policy. By ridding the state of the highly distortionary capital-income tax, economic well-being increases.

3.2 Taxing Take-Home Pay Only

Here, we start with a labor-income measure that corresponds to gross take-home pay. Things such as pension contributions from a company or 401(K) contributions that are not subject to current taxes are excluded from this labor-income measure.

For people working in Missouri, total wage and salary disbursements was $121.33 billion in 2012. With wage and salary disbursements as the labor-income tax base, the rate that would generate $6.424 billion is obtained by computing $\frac{\$6.424}{\$121.33}$ = 0.0529. Because the tax base is smaller when we limit it to just wage and salary disbursements, the tax rate must increase. The rate is 5.29 percent on wage-and-salary disbursements in order to raise enough state revenues to offset the amount that the individual and corporate income taxes currently generate.

Overall, our numerical examples demonstrate that the tax base matters. Even with the smallest measure of the labor-income tax base that we consider, the marginal income tax rate on labor income is lower than the rate currently implemented on individual and corporate income, which is 6 percent. Thus, the rate on labor-income only is lower than the current marginal income tax rate, is less distortionary, and is welfare improving.

4. Is There A Better Way?

So far, we have limited ourselves to taxing income. If that is the restriction, it is better to tax labor income than capital income. But the elasticity principle that lies behind this result means there may be other tax bases that would be even better.

To reiterate, the elasticity tax principle tells us that we should seek to tax items in which the quantity changes are the least responsive to changes in tax rates. By following this principle, we will find the set of taxes that are the least distortionary in terms of affecting quantities, and therefore, do the least harm in terms of reducing people's welfare.

One item that satisfies the inelasticity principle could serve as a tax base. The value of unimproved land is a tax base where the quantity of the good is completely invariant to changes to tax rates. If tax rates on land values were to increase from 0 to 1 percent, for example, the after-tax returns to the land would decline. By the logic of basic asset-pricing formula, the price of the land would decline. In terms of the distorting effect on the quantity of land, there is none. The supply of land within the state's borders is fixed.

This is the major difference between land and capital. When you tax physical capital, the decline in the value of physical capital means that it simply moves to where it is more highly valued. Capital mobility explains why capital taxation is so harmful. In contrast, there is no way to move land. Consequently, the absence of land mobility means it is a good asset to tax. Instead of resulting in distorting change in the quantity of land, the usage of the land changes. Suppose the land is currently used as a parking lot. By taxing

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the land value, the returns to the parking lot owner are reduced. The opportunity arises to use the land for other purposes. Perhaps a builder sees an opportunity to construct an apartment complex on the land. In the absence of the land-value tax, the inertia is to keep the land as a parking lot. By implementing the land-value tax, there is now an incentive to put the land to its most highly valued use. The tax rate change instigates a dynamic adjustment from current use to the land's more highly valued use.

In order to get an idea about the land value tax in Missouri, we present the results from a simulation of the land value. Data on land values are theoretically available from the county assessor. Current law states that the assessed value of the property is divided between its land component and its improvement component, where the latter includes all improvements added to the land, such as buildings. Improvements, therefore, fall under the category of capital. Because taxes are applied against land and improvements at the same rate, greater care is taken to calculate the assessed value with less effort devoted to the division of values of the two components.

To construct our simulation, we use data from the United States Department of

Agriculture (USDA). In their 2012 report, Missouri's total land area is listed as 43,974,900 acres. Of that amount, 39,776,900 acres are rural, leaving 4,197,765 acres of urban land. Suppose the government owns 1 percent of the total land.[11] We further assume that the 1 percent is divided between rural and urban settings, leaving privately owned land in the rural area at 39,379,131 acres and privately owned urban land at 4,155,787 acres. Next, we need estimates of price data. The USDA reports that in 2012, the average price of rural land in Missouri was $2,900 per acre.[12] We compute the product of privately owned rural land by its average price, yielding a market value equal to $114.2 billion. Urban property is more challenging because we could not find data on the average value per acre. If, for example, you price a new lot in a city subdivision in Saint Louis, Kansas City, or Springfield, the price can easily be $30,000 or more. And there are four to six lots per acre. For starters, we apply a conservative estimate and assume the value of urban land is $30,000 per acre. Under this assumption, the value of privately owned urban land is $124.7 billion. The result is that the total value of Missouri's privately held land is $238.9 billion.

We also compute value of privately owned urban land at $75,000 per acre.

Table 1: Results from Land Value Tax Simulations

Case	Land Value	Net State General Revenues	Implied Land-Value Tax Rate
Urban value = $30,000 per acre Rural land = $2,900 per acre	$238,873,089,900	$7,340,600,000	3.72 %
Urban value = $75,000 per acre Rural land = $2,900 per acre	$425,883,531,150	$7,340,600,000	1.72 %

In this case, the value of privately owned urban land is $311.7 billion. Add the value of privately owned rural land to obtain $425.9 billion.

Table 1 reports the total land for Missouri for the two different assumptions regarding urban land values. In addition, Table 1 reports the net general revenue value for Missouri in fiscal year 2012, which ended in June 2012. By dividing the Net General Revenue figure by the total land value, we can compute the tax rate on land value that would be revenue neutral; that is, the tax rate on land would generate state revenue equal to that obtained from all the other taxes that the state government currently collects. As Table 1 shows, Missouri collected $7.3 billion in revenues, after accounting for refunds, from individual income taxes, sales and use taxes, corporate income taxes, and others. In the "low-value" urban assumption, the tax rate would be 3.72 percent. In the high-value urban assumption, the tax rate on land value is 1.72 percent.

The chief benefit of the land-value tax is that it applies the inelasticity principle. The tax is applied to land and the quantity of land is not responsive to movements in the after-tax price of land. One problem associated with the land-value tax is the quality of data that is used to study the tax. So, on theoretical grounds, the land-value tax is useful, but without better measurement, we cannot tell what the tax rate would be.

5. Summary

In this paper, we consider two classes of tax structures. In the first class, we ask whether all income should be taxed equally. The economic literature provides one answer; if the elasticity of capital is very high because of its mobility, then the least harmful income tax would set the tax rate on capital income equal to 0 and rely on labor income taxes to pay for government spending. The second class relaxes the assumption that we must tax income. We consider a land-value tax because it applies the principle of doing the least harm to citizens; the quantity of land is not distorted because its supply is fixed. The more general point is that once we know what the government spending level is, we ought to seek taxes that do the least harm to people. In general, the least harm is associated with taxes, which affect prices, that create the smallest distortions to the quantities of goods and services that people want to consume. Our starting point is that the current tax structure does not apply the inelasticity principle. Therefore, there are opportunities to improve the tax structure and people's welfare by creating thoughtful tax reform.

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For people working in Missouri, total wage and salary disbursements was $121.33 billion in 2012.

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So far, we have limited ourselves to taxing income. If that is the restriction, it is better to tax labor income than capital income.

NOTES

[1] The term "effective" is used to mean that this number represents the total number of subsections enacted less the ones that are repealed. Rather than "effective" you may want to substitute the word "net" subsections in order to recognize that repealed subsections are deleted from this count. Six subsections have been repealed between 1973 and 2012.

[2] Subsection 127 is a good example. It recognizes that survivors of Nazi persecution receive restitution. Subsection 127 stipulates that such restitution is not subject to Missouri state income taxes and is allowed to be deducted from the filer's adjusted gross income.

[3] Subsection 173 is an example of modifying behavior. It allows small business owners to deduct an amount from their adjusted gross income. The subsection makes this deduction possible provided the small business owner pays a high enough wage and hires enough people above that wage floor.

[4] An Internal Revenue Service report states that the complexity of the tax code is "the most serious problem facing taxpayers" and is "the largest source of compliance burdens." See http://www.irs.gov/pub/irs-utl/08_tas_arc_msp_1.pdf.

[5] Basically, it is OK to think of capital as everything that a company uses that is not land or people when producing goods and services.

[6] Diamond and Mirrlees (1966) were even more general. Their principle of taxation was to set tax rates on commodities so that the elasticity was equated. The corollary to that statement is that if there is a good that is completely inelastic, the tax rate should be applied to only that good. There is no distortionary effect because there is no change in the quantity that people enjoy.

[7] For the purposes of this illustration, ignore the risks that arise from job separations when you are employee and when you are a consultant. These are important and may explain why some people would not opt for the sole proprietorship.

[8] The data are obtained for calendar year series on individual income taxes from http://eparc.missouri.edu/publications/hist_tax/sec02/orp12t14.pdf.

[9] Note that we would be lowering the tax rate on labor income from 6 percent to 3.86 percent.

[10] If Missouri eliminated the corporate income tax and all tax credits, the amount of net general revenue lost would be approximately slightly less than $5.986 billion because the revenues generated from the corporate income tax is slightly less than the tax credits redeemed. See Ishmael and Rathbone (2012) for detailed comparisons of the economic development tax credits relative to the corporate income tax revenues. If we collect enough revenues to offset the sum of individual and corporate income less tax credits, then $\frac{5.986}{121.33}$ = 0.0493, or 4.93 percent, is the labor income tax rate.

[11] There are no data on the acreage that state and local governments own. So, the 1 percent value is an assumption. This includes state parks, roads, government buildings, etc.

[12] The report divided rural land into cropland and pastureland, but we do not have any measurements of the acreage under each category — and the distinction almost assuredly changes from year-to-year. We opted for the average price per acre of rural land. Source: http://www.nass.usda.gov/Publications/Todays_Reports/reports/land0812.pdf.

PERSONAL NOTES

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