

Economic Fundamentals: Tax Incidence and Elasticity

Many debates about tax policy center on who ultimately pays for a tax. For instance, if the government puts a tax on banks, will the banks pass the tax on to customers or will their shareholders have to pay for it? Alternatively, will it be split between the two groups? If so, in what proportion? The economic incidence of a tax provides answers to these questions.

What is tax incidence? How can it help us solve how taxes affect well-being? How is this related to the concept of elasticity?

A simple example: legal versus economic incidence of a tax

The Goods and Services Tax (GST) is levied on the sale of goods and services in Australia. When a person buys goods from the hardware store, a 10 per cent tax is levied on the total cost of their purchase. While the consumer is not responsible for sending the value of the 10 per cent tax to the Australian Tax Office (ATO), the hardware store is. Since the hardware store is legally responsible for remitting the value of the tax to the tax authorities, it bears the *legal incidence* of the tax.

In order to pay the value of the GST owed to the ATO, the hardware store must make one of three choices:

1. It can increase the prices of all its goods by 10 per cent, passing on the complete cost of the tax to consumers in the form of higher prices.
2. It can keep the level of prices the same and pay the tax itself, thereby accepting reduced revenue.
3. It can opt to increase the price of its goods by less than 10 per cent, thereby passing some of the cost of the tax onto consumers and bearing some of it itself.

The choice made by the hardware store will determine what is referred to as the *economic incidence* of the tax. The economic incidence of a tax refers to how the market distributes a tax between buyers and sellers. In the first case above, buyers (consumers) bear the economic incidence, while in the second, it is the seller (the hardware store). In the third case, the economic incidence is shared between the buyer and the seller.

In this example, the hardware store's decision to pass on the tax in full is constrained by market power. In a competitive market, such as in a large city where a number of hardware stores compete against each other for shoppers, competition constrains the hardware store's choice. If one hardware store tries to pass on the entire tax to consumers, a competitor can lure away its customers by partially bearing some of the cost. However, if the hardware store has market power, such as in a small town where there are no competitors, competitive pressure will be absent, and it is more likely the tax will be passed on in full to consumers.

While legislation stipulates the party that bears the legal incidence of a tax, how can we identify who bears the economic incidence?

Elasticities determine the economic incidence

In the example above, the hardware store was given a choice about how to collect the tax revenue for the ATO. In practice however, elasticities influence the hardware store's choice and ultimately determine the economic incidence of a tax. The term elasticity refers to the extent to which behaviour changes in response to a change in price.

Elasticities refer to the responsiveness of supply and demand. Elastic demand means that buyers have good substitutes for a taxed product that they can easily buy instead of buying the taxed good. For instance, if you increase the price of apples, people are likely to buy other fruits instead. In this case, the demand for apples is elastic, since demand for apples changes a lot when the price changes. By contrast, if the price of petrol increases, demand for it does not change much in the short-run (but can over longer periods). In this second example, the demand for petrol is inelastic. Elastic supply means that the resources and inputs used to produce a good can be easily used to produce other products instead.

The slope of the supply and demand curves capture the elasticities of supply and demand, respectively. For instance, if a change in the price results in a proportional change in the demand, it is unit elastic: an increase in price by 1 per cent results in a decrease in demand by 1 per cent. The general rule is that the more elastic side of the market will pay a smaller share of the tax and the less elastic side will pay a greater share.

The economic incidence of a bank levy

The concept of economic incidence can be demonstrated using the example of a bank levy, similar to the levy introduced by the Australian Government in 2017 on certain types of liabilities held by large banks.

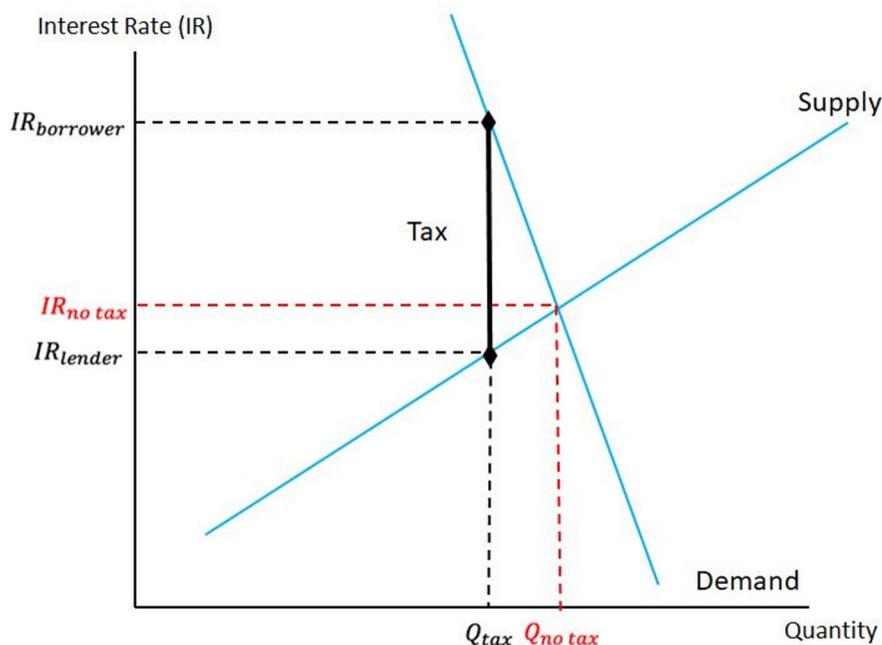
A bank's liabilities are financial claims – or IOUs – issued by the bank. Typically, banks have two sources of liabilities: the savings customers deposit for safekeeping and loans from other sources that banks use to fund the loans they make to customers. The bank tax is levied on the latter class of liabilities. Who bears the cost of this tax: customers or shareholders? This is determined by the elasticity of supply and demand.

Let us first consider demand. Higher interest rates make it more costly to borrow to buy a house or to start a business. The demand for credit decreases as interest rates rise. For new borrowers, when it is expensive to borrow they borrow less. Yet, existing borrowers tend to be locked in – houses and businesses are illiquid. That is, borrowers retain these types of investments when interest rates increase. Thus, market demand is fairly inelastic for the large number of existing 'locked-in' customers. In other words, banks could increase the price of a mortgage by a lot and demand from existing borrowers would not change much.

Now let us consider supply. Banks have easy access to spare capacity to increase lending if needed. This capacity comes via their ability to tap into international capital markets, which allow banks to borrow large amounts without incurring significant increases in funding costs. As a result, the supply of loans is relatively elastic.

Putting this together (Figure 1), we can see that the relatively more inelastic demand curve means the burden of the tax falls mostly on borrowers. The interest rate paid by borrowers increases by a large amount from IR_{notax} to $IR_{borrower}$, while the interest rate received by the bank decreases by only a small amount from IR_{notax} to IR_{lender} .

Figure 1. Who pays the bank tax?



Why does the economic incidence matter?

The economic incidence of a tax is determined by observing how a tax changes behaviour and who ends up bearing its cost. These are important questions to answer, because they allow policy makers to analyse the distributional consequences of different taxes. This is increasingly significant in a world where taxes are used to address non tax policy objectives, such as reinforcing social goals or correcting market failures [see our tax fact on [taxing negative externalities](#)].

In the bank levy example, part of the government's policy objectives were to discourage excessive risk taking in the financial sector, by taxing risky bank liabilities that could contribute to economic instability. However, if the incidence mostly falls on borrowers, rather than banks, then the levy is unlikely to achieve this particular policy objective. Other policy objectives of the levy related to competition and accountability of the sector as well as the sector's contribution to the broader economy [1].

[1] Parliament of Australia (2017), 'The Major Bank Levy explained.'

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