The fiscal theory of the price level (FTPL) is a recent approach to explaining price level determination in an economy. In contrast with other monetary theories, it may not be well known even among economists, although it has prominent exponents such as Christopher Sims (winner of the Nobel prize in economics), Michael Woodford and John Cochrane. However, the FTPL is often seen as a quite obscure economic theory without much interest to economists and policymakers.

In this article, I discuss what the FTPL is and how it can be used to think about the effects of monetary and fiscal policy on prices and inflation. They key insight is that the FTPL always operates in the background and is central to our understanding of a modern economy.

What Is the Fiscal Theory of the Price Level?

The FTPL, as the name implies, is an economic theory of price level determination that gives fiscal policy a central role. The aggregate price level measures the purchasing power of its currency in terms of a basket of goods. Older theories of price level determination — such as the quantity theory of money — posit that the price level is determined by the quantity of money circulating in the economy. While the FTPL is consistent with the quantity theory, it takes a more encompassing view of a modern economy where monetary and fiscal policies are intertwined via the so-called government budget constraint (GBC).
The GBC tracks the evolution of debt issued by the federal government as a function of its revenue and its expenditure. The difference between these two is the surplus (if positive) or the deficit (if negative). If the government runs a deficit, it must close the gap by issuing debt (that is, by borrowing from the public). The debt instruments (Treasury notes, bills and bonds with different maturities) are sold on the open market in an auction format to willing investors at a rate reflecting supply and demand. Persistent deficits thereby lead to an increasing debt load for the government and the country.

The GBC is an accounting identity. It is turned into an economic theory by making behavioral assumptions about the economic actors involved, namely investors and monetary and fiscal policymakers. The key word in the preceding paragraph is willing: Investors voluntarily purchase government debt — that is, they lend money to the fiscal authority — only if they expect to be repaid in terms of principal and interest due. The key determinant for this willingness is an expectation that the government will create enough fiscal resources in the future to cover such payments.

This idea is captured by the concept of an intertemporal GBC (IGBC), which is the "present-value" version of the GBC. More specifically, the IGBC stipulates that the value of outstanding government debt is the (discounted) sum of future surpluses. Investors willingly buy and hold outstanding government debt only if they expect the IGBC to be in force. In other words, outstanding debt has value today because it will be repaid by future revenue net of expenditures.

Where Does the Price Level Come Into Play?

Almost all U.S. government debt is nominal. That is, it is issued with a face value in U.S. dollars. The real value (or purchasing power) of such debt is computed by dividing the value of nominal debt outstanding by the price level. The IGBC then describes the real value of debt as determined by the real value of future surpluses.

If we think of the IGBC as an equality, then changes on the right-hand side (namely, increases or decreases in future fiscal variables) imply changes on the left-hand side (namely, real debt). The variable that adjusts is the price level, since the nominal value of debt outstanding is predetermined.

Why Is This a Fiscal Theory?

For one, the theory is based on the idea of the GBC, which tracks key fiscal variables. More importantly, the theory rests on the assessment of fiscal policy measures in terms of government expenditure and government revenue:

- The former covers items such as defense, infrastructure and health care.
- The latter is essentially income and corporate tax revenue.
The current price level therefore depends on the evolution of current and future fiscal variables. For instance, higher federal infrastructure spending today needs to be balanced by higher future tax revenue via tax hikes. If it's not, there would be an impact on the residual variable, namely the price level. The FTPL then simply postulates that the price level is determined by and moves around based on the fiscal choices that the government makes.

**What About Money?**

It may be regarded as controversial that the FTPL discusses nominal quantities without reference to currency or monetary policy. This is not the case, however, since there is a revenue component of the GBC that depends directly on monetary policy. The Fed's excess earnings from its operations — including seigniorage from issuing the U.S. dollar — are transferred annually to the Treasury.

In addition, there is revenue generated from the inflation tax: Inflation is revenue for the fiscal authority, because it is a tax on the holders of nominal government liabilities, debt and currency. Surprise inflation reduces the value of nominal assets and therefore improves the fiscal position of the government. In other words, if the monetary authority does not provide enough revenue or if there is an inflation surprise, then something else has to adjust so that the IGBC holds for a given path of government expenditure and fiscal revenue — and this is the price level.

The FTPL thus rests crucially on the interplay between monetary and fiscal policymakers, since either institution can supply resources to back outstanding debt. When there is a deviation from anticipated plans, the price level remains as the equilibrating variable. Consequently, the FTPL is a fiscal theory only insofar it is centered on the GBC, while monetary policy still plays a powerful role.

**The Games People Play: Monetary-Fiscal Interactions**

The interplay between monetary and fiscal policy can also be formalized by thinking more about the rules and boundaries of their interaction. This is described in the seminal 1991 paper "Equilibria Under 'Active' and 'Passive' Monetary and Fiscal Policies," which categorizes whether such policies are active or passive:

- A passive policy is designed to ensure that the IGBC holds. That is, debt holders can be confident that their loans to the government are paid back.
- An active policy pursues other objectives.

The typical presumption is that monetary policy is active while fiscal policy is passive. The Fed's behavior is prescribed by the Federal Reserve Act of 1977, which sets as goals maximum employment and price stability, with no mandate for maintaining intertemporal budget balance. Instead, it is commonly expected that Congress is tasked with being the guardian of U.S. fiscal solvency and debt stability.
However, Congress has the legislative power to change the behavior of the Fed, mandating it to be a "passive" policy institution designed to supply enough revenue via the inflation tax or its excess earnings to preserve budget balance while Congress would be free to pursue its own fiscal objectives. Such a policy arrangement fits well within the logic of the monetary policy interactions literature in preserving macroeconomic stability. It may not even be inflationary because, as discussed above, what moves the price level is the lack of expected intertemporal budget balance. However, the historical record shows that hyperinflations — even just prolonged persistent high inflation episodes — typically start with the central bank giving up the monetary reins.\textsuperscript{7}

**Is the FTPL Testable?**

The preceding discussion thus raises the questions of whether the FTPL is actually a good theory for guiding policymakers and whether it can be validated. Economists think of a theoretical model as testable when it delivers predictions for how observed economic variables behave with respect to each other or over time. This is clearly the case here, as a long body of research has theoretically and empirically demonstrated.\textsuperscript{8} At the same time, identification of the specific policy mix is tenuous and can require the use of external information, such as policymaker statements or dramatic changes in the economic environment.

The difficulty with testing the FTPL or identifying the policy mix is that the power of the theory rests in a forward-looking present-value relationship. That is, current outcomes depend on expectations of the future path of fiscal revenue and expenditures. These can be assessed from an extrapolation of current policy behavior when it is rules-based, but this is by necessity fraught with uncertainty. In addition, the future paths of interest rates matter, too, as they provide the discounting in the present value calculations. Despite these empirical challenges, the FTPL nevertheless provides a framework for assessing surprise fiscal policy actions, as the following example demonstrates.

**A Practical Example**

The Biden administration announced that it would "cancel" up to $10,000 in federal student loan debt (or $20,000 for some borrowers), subject to certain income limits. Although details remain scarce at this point, the debt forgiveness can be considered as an expense of the federal government. The debt cancellation and the subsequent reduction in loan payments is a reduction in tax revenue.

In any case, this would constitute a transfer of resources and consequently an increase in the net primary deficit. The fiscal impact would be drawn out over several years because of the impact of the missing loan repayments and other provisions in the debt forgiveness that alters income-based repayment plans.

The overall cost of this debt forgiveness is estimated to be between $440 billion and $600 billion in present value terms. This presents a sizeable impact on the U.S. federal debt position. According to estimates by the Committee for a Responsible Federal Budget, it would also wipe
out any presumed savings under the Inflation Reduction Act.

In fact, as the FTPL suggests, student loan forgiveness would have an inflationary impact. At the end of June, total outstanding federal debt amounted to $30.6 trillion, while the primary deficit stood at $0.3 trillion. Since this student loan cancellation program is unfunded, it can therefore be thought of as a fairly clean policy experiment where the present value of future net surplus has declined. In the absence of changes on the right-hand side of this ledger — namely higher revenue from the Fed (unlikely if it persists in raising rates to combat inflation and a declining balance sheet) or higher tax revenue compared to the path before the administration’s announcement — what has to equilibrate this imbalance is the price level. Based on the fraction of outstanding debt the cancelled debt likely represents, a quick back-of-the-envelope calculation reveals that student loan forgiveness could raise the price level by as much as 1.6 percent as of July 2022.9

Conclusion

The FTPL may seem like an arcane concept interesting only to economists and therefore may not be of much interest even to an interested public. However, the FTPL is always operating in the background as a valuation equation for U.S. government debt. It provides a key context for assessing and understanding the soundness and solvency of the U.S. financial system and the health of the economy. While the policymakers and the public may not show much interest in the FTPL, the FTPL is certainly interested in them.

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1 See the Bureau of Economic Analysis’ website for more on the various price indexes.

2 This differentiates the FTPL also from ideas espoused by Modern Monetary Theory (MMT). This differentiation is further discussed in the 2021 article "MMT and Government Finance: You Can’t Always Get What You Want."

3 In the simplest case, price setters in the economy and the economic actors who hold government debt would recognize that their nominal wealth including such debt would no longer align with expected future surpluses. This would lead them to re-price their nominal holdings by changing prices directly or altering their consumption activities, for instance. In richer frameworks, this may also lead to changes in labor supply and eventually tax collection. This channel is explored in more detail in "Does Redistribution Increase Output? The Centrality of Labor Supply."

4 The interest expense on outstanding debt is often counted as an expenditure category. The deficit net of interest expense is called the primary deficit. For the computation of the IGBC, the primary deficit matters most, since the government needs to generate at least as much revenue to cover current interest payments.
This idea has been around — even before the FTPL was known as such — in the 1981 paper "Some Unpleasant Monetarist Arithmetic." The authors' deep insight was to note that inflation can arise even if monetary policy is anti-inflationary because of the unwillingness of the fiscal authority to provide net revenue.

This assumption has been empirically verified in the U.S. for the period of the Great Moderation, as seen in my 2004 paper "Testing for Indeterminacy: An Application to U.S. Monetary Policy," co-authored with Frank Schorfheide.

This is discussed in more detail in the 1982 article "The Ends of Four Big Inflations."


This calculation is based on a PCE price level of 295.71 and an assumed present-value impact of the loan forgiveness of $500 billion. The latter constitutes about 1.6 percent of the outstanding nominal debt, which then translates — all else equal — to a revaluation of about 1.6 percent of the price level.

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