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Nonmonetary Forces and Appropriate Monetary Policy

Remarks by

Stephen I. Miran

Member

Board of Governors of the Federal Reserve System

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I'd like to thank the Economic Club of New York for the invitation to speak today.[1] This is my first time speaking in my new capacity as a member of the Federal Reserve Board. As such, I would like to be transparent on my thinking. Subsequent to last week's meeting of the Federal Open Market Committee (FOMC), it should be clear that my view of appropriate monetary policy diverges from those of other FOMC members; I view policy as very restrictive, believe it poses material risks to the Fed's employment mandate, and would like to explain why.

There's no perfect means for determining appropriate monetary policy at any given time. That said, rules of a Taylor type are a useful way to gauge where the federal funds rate should be set based on the prevailing macroeconomic conditions and outlook. Let me first say that I find these types of policy rules to be useful as indications, but I am not slavishly devoted to them.

The Taylor rule suggests policymakers ought to think about three key variables in determining the appropriate fed funds rate: inflation, the neutral rate of interest, and the output gap. As one might expect, changes in inflation and employment—one way of framing the output gap—receive due attention from Fed officials. However, changes in the neutral rate, or the policy rate that would be neither expansionary nor contractionary when the economy is at full employment, are often underappreciated.

Some argue that leaving the neutral rate, which I will refer to as r*, out of the conversation makes sense because it is unobservable and therefore highly uncertain. But so are potential growth and the natural rate of unemployment, yet they are frequently updated and discussed. Because many r* estimates are based on empirical models

[1] The views expressed here are my own and are not necessarily those of my colleagues on the Federal Reserve Board or the Federal Open Market Committee.

requiring a great deal of time-series data, they can be backward-looking and slow to adjust. Moving too slowly to update a rapidly changing neutral rate raises the risk of policy mistakes.

R* reflects the balance of saving and investment in an economy and it evolves over time with demographics, productivity, fiscal policy, and other factors. It is my view that previously high immigration rates and large fiscally driven decreases in net national saving, both of which raise neutral rates, were insufficiently accounted for in previous estimates of neutral rates. Monetary policy was not as tight as many believed. That same effect may be taking place today, but in the opposite direction. In my view, insufficiently accounting for the strong downward pressure on the neutral rate resulting from changes in border and fiscal policies is leading some to believe policy is *less* restrictive than it actually is.

Today, I will give explicit consideration to nonmonetary factors—such as shifts in border and tax policy, trade renegotiation, and regulatory dynamics—that can have substantial effects on the appropriate setting for monetary policy. I'll focus on the factors that have changed most meaningfully over the course of 2025 as they relate to my expectations for inflation, r*, and the output gap, emphasizing ones I feel are underappreciated.

Before I proceed, I want to be clear: I am not attempting to provide an impossible degree of precision, but a general ballpark. Based on this analysis, I believe the appropriate fed funds rate is in the mid-2 percent area, almost 2 percentage points lower than current policy. The Federal Reserve has been entrusted with the important goal of promoting price stability for the good of all American households and businesses, and I

am committed to bringing inflation sustainably back to 2 percent. However, leaving policy restrictive by such a large degree brings significant risks for the Fed's employment mandate.

Policies Impacting Inflation

Rents

I'll start with inflation. The general approach I take is to assume all components of inflation that I'm not explicitly addressing will continue at their current run rates. I look forward to breaking down my expectations for other components of inflation in the future, but today I'll focus on what I consider to be first-order changes to the inflation forecast.

Housing represents nearly 16 percent of the personal consumption expenditures (PCE) price index, and more than double that in the consumer price index (CPI). Housing affordability is highly influential for Americans' perception of, and experience of, the economy.

Because measured inflation incorporates rental inflation with a lag, it has remained elevated above market rents for several years, infamously "catching up." While an index of all-tenant rents took time to incorporate the spike in new rents in 2021 and 2022, that gap subsequently closed, indicating the catch-up is complete.[2] Now, new rent indices show this inflation is well below all-tenant inflation, around 1 percent annualized.[3]

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[2] See Lara Loewenstein, Jason Meyer, and Randal J. Verbrugge (2024), "New-Tenant Rent Passthrough and the Future of Rent Inflation," Economic Commentary 2024-17 (Cleveland: Federal Reserve Bank of Cleveland, October), https://www.clevelandfed.org/publications/economic-commentary/2024/ec-202417-new-tenant-rent-passthrough-and-future-of-rent-inflation.

[3] This number comes from the Bureau of Labor Statistics' new tenant repeat rent survey, minus the most recent (too-noisy) observation. A similar number comes from a weighted average of single-family data from Cotality and multifamily data from Apartment List.

Rents for all tenants will fall toward this low rate as people moving or renewing leases sign at current market rates, and I expect CPI rent inflation will decline from its current level of roughly 3.5 percent to below 1.5 percent in 2027. This implies a roughly 0.3 percentage point decline in total PCE inflation; by early 2028, I expect that effect to grow to a 0.4 percentage point decline. Per a Taylor rule, that works out to an appropriate fed funds rate roughly half a percentage point lower than current shelter inflation would imply.[4]

One might characterize this view on rental inflation as optimistic. However, I believe forecasters have underappreciated the significant impact of immigration policy on rent inflation—both on the way up and, now, on the way down. Work by Albert Saiz finds an elasticity of rents with respect to immigrant occupants of about 1.[5] Net immigration averaged roughly 1 million per year in the decade leading up to the pandemic.[6] Given that roughly 100 million Americans rent, net zero immigration going forward would imply 1 point lower rent inflation per year.

Policies Affecting r*

Population growth

The border story is also, in my view, affecting neutral rates. Steady-state population growth matters for neutral rates, and U.S. border policy has changed markedly, from effectively open borders to potentially negative net migration. Further, these effects may interact with a structurally aging population, which increases the supply

[4] Throughout, I'm using my expectations for future economic variables to indicate where policy ought to be today. This is necessary because of the uncertain lags with which monetary policy affects the economy.
[5] See Albert Saiz (2003), "Room in the Kitchen for the Melting Pot: Immigration and Rental Prices," *Review of Economics and Statistics,* vol. 85 (August), pp. 502–21.
[6] See Congressional Budget Office (2025), *The Demographic Outlook: 2025 to 2055* (Washington: CBO, January), https://www.cbo.gov/publication/60875.

of capital and reduces demand for investment. Indeed, analysis by Etienne Gagnon and others shows that demographic changes may have already lowered the neutral rate by over 1 percentage point since 1980.[7]

The U.S. population has grown by around 1 percent annually in recent years, driven in large part by illegal immigration. Already in the first half of this year, roughly 1.5 million of these immigrants have left the country, according to the Current Population Survey, though this number may be an overestimate due to nonresponse issues.[8] Assuming some overcounting, it is plausible to me that 2 million illegal immigrants will have exited the country by year-end, thereby reducing annual population growth from 1 percent to 0.4 percent. Based on estimates from both Weiske and Ho, a 1 percentage point drop in annual population growth can reduce r* by 0.6 percentage point. So, the expected decline in U.S. population growth equates to a nearly 0.4 percentage point drop in the neutral fed funds rate.[9]

Labor market statistics and anecdotal evidence suggest border policy is exerting a major impact on the economy. While the effect would likely normalize over time, this reduced level of population growth is also consistent with zero net immigration in 2026 and 2027. It was just a few long years ago that there was widespread discussion about whether most developed economies would, due to declining fertility rates, converge to

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[7] See Etienne Gagnon, Benjamin K. Johannsen, and David Lopez-Salido (2021), "Understanding the New Normal: The Role of Demographics," *IMF Economic Review,* vol. 69 (June), pp. 357–90.
[8] See, for instance, Jeffrey S. Passel and Jens Manuel Krogstad (2025), "U.S. Unauthorized Immigrant Population Reached a Record 14 Million in 2023," Pew Research Center, August 21.
[9] See Sebastian Weiske (2016), "Population Growth, the Natural Rate of Interest, and Inflation," working paper, Goethe University Frankfurt; Paul Ho (2024), "How Do Demographics Influence r*?" Economic Brief 24-18 (Richmond: Federal Bank of Richmond, June), https://www.richmondfed.org/publications/research/economic_brief/2024/eb_24-18.

Japan's low interest rates without significant immigration; those economic dynamics are still a force, albeit among many others.

Increases in national saving from trade policy

Additionally, trade renegotiation and the tax legislation recently passed by the Congress should also affect r*. I think of this primarily through the increase in national saving—that is, the net supply of loanable funds.

With respect to tariffs, relatively small changes in some goods prices have led to what I view as unreasonable levels of concern. While my read of the elasticities and incidence theory is that exporting nations will have to lower their selling prices, I also believe tariffs will lead to substantial swings in net national saving.

The Congressional Budget Office estimates tariff revenue could reduce the federal budget deficit by over $380 billion per year over the coming decade.[10] This is a significant swing in the supply–demand balance for loanable funds, as national borrowing declines by a comparable amount. A 1 percentage point change in the deficit-to-GDP (gross domestic product) ratio moves r* by nearly four tenths of a percentage point, according to the average of estimates summarized by Rachel and Summers.[11] This 1.3 percent of GDP change in national saving reduces the neutral rate by half a percentage point.[12]

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[10] See Phill Swagel (2025), "An Update About CBO's Projections of the Budgetary Effects of Tariffs," CBO Blog, August 22, https://www.cbo.gov/publication/61697.

[11] See Łukasz Rachel and Lawrence H. Summers (2019), "On Secular Stagnation in the Industrialized World," NBER Working Paper Series 26198 (Cambridge, Mass.: National Bureau of Economic Research, August), https://www.nber.org/papers/w26198.

[12] Mehrotra and Waugh (2025) show a tariff shock should result in an immediate 30 basis point reduction in short-term interest rates. The policy rate would then gradually increase over the ensuing five years, finishing at a point slightly above the initial steady state. See Neil Mehrotra and Michael E. Waugh (2025), "Tariffs, Trade Wars, and the Natural Rate of Interest," NBER Working Paper Series 34206 (Cambridge, Mass.: National Bureau of Economic Research, September), https://www.nber.org/papers/w34206.

Tariffs are not the only means by which trade policy is affecting the supply of loanable funds. Loans and loan guarantees pledged by East Asian countries in exchange for relatively low tariff ceilings have reached $900 billion.[13] These guarantees entail an exogenous increase in credit supply, which research suggests would be around 7 percent.[14] Using Council of Economic Advisers' (CEA) estimates of the interest elasticity of investment and Michael Boskin's interest elasticity of saving, this would further reduce neutral policy rates by around two tenths of a percentage point.[15]

Increases in national saving from tax policy

The large tax law passed this year also has a strong effect on national saving.[16] There are, of course, other consequences of the tax law besides the increase in net national saving, which I'll discuss later in the context of the output gap.

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[13] This $900 billion is only a subset of the more than $3 trillion of U.S. investment pledges made by foreign countries in recent months. While this pledged investment would certainly be expected to lead to new activity, the bulk of it would likely leave the supply–demand balance for loanable funds, and therefore r*, relatively unchanged. This is because, apart from the $900 billion in loan guarantees, much of these commitments are in the form of direct investment, which is less likely to exert pressure on r* despite a strong positive impact on output. Gokceli, Fidrmuc, and Ghosh (2022) find no evidence that FDI crowds out domestic investment in developed OECD countries; see Emre Gokceli, Jan Fidrmuc, and Sugata Ghosh (2022), "Effect of Foreign Direct Investment on Economic Growth and Domestic Investment: Evidence from OECD Countries," *European Journal of Business Science and Technology,* vol. 8 (2), pp. 190–216.

[14] Work done by Bachas, Kim, and Yannelis (2021) indicates that loan guarantees contribute to increased credit supply, and the elasticity estimated in their work suggests that loan guarantees of this magnitude imply an exogenous 7 percent increase in credit supply. To translate this into an effect on r*, estimates of the interest elasticity of investment demand and the interest elasticity of saving supply can be used. The former can be backed out from the UCC elasticity of investment and the interest elasticity of UCC (which multiply to the interest elasticity of investment). Using this approach with parameters from Council of Economic Advisers (2025c) yields an interest elasticity of investment of approximately negative 0.3. Meanwhile, estimates from Boskin (1978) are used for the interest elasticity of saving. Boskin uses multiple estimation strategies and finds estimates centered around 0.3. See Natalie Bachas, Olivia S. Kim, and Constantine Yannelis (2021), "Loan Guarantees and Credit Supply," *Journal of Financial Economics,* vol. 139 (March), pp. 872–94.

[15] See Michael J. Boskin (1978), "Taxation, Saving, and the Rate of Interest," *Journal of Political Economy,* vol. 86 (April, part 2), pp. S3–S27; Council of Economic Advisers (2025c), "The One Big Beautiful Bill: Legislation for Historic Prosperity and Deficit Reduction," white paper (Washington: CEA, June), https://www.whitehouse.gov/research/2025/06/the-one-big-beautiful-bill-legislation-for-historic-prosperity-and-deficit-reduction.

[16] The OBBB is likely to have three distinct effects that are relevant for determining the optimal federal funds rate. The first is that reduced deficits lead to increased national saving, which reduces r*. The second is that increased investment demand raises r*. The third is that consumption multiplier effects will

The CEA calculates an increase in national saving of $3.83 trillion over the next 10 years (relative to the previous policy baseline), resulting from economic growth induced by tax policy.[17] This represents roughly 1.3 percent of GDP, implying a half of a percentage point reduction in r* and the appropriate policy rate through the Rachel–Summers channel. Indeed, the federal deficit in the second and third fiscal quarters of this year was nearly $140 billion less than in the comparable period last year. This is a small sample size but indicative, in my opinion, of the direction of the deficit.

On the other hand, the CEA estimates that the tax law will generate annual investment increases of up to 10 percent in the next several years relative to the previous policy baseline. This should be associated with an increase in r*, and thus the appropriate fed funds rate, of around three tenths of a point. Let me also note that while I am relying partially on previous CEA research at the moment, I look forward to working more with Board staff and their forecasts in the coming months.

*Effect of deregulation and energy on r**

America's regulatory patchwork has become a material impediment to growth.[18] Economists tend to underappreciate the economic impact of regulations, largely because qualitative factors can be difficult to study empirically. In many cases, a regulation can serve as an infinite tax rate, prohibiting activity altogether. An interdiction on output because a special snail is found in a region will restrict output much more than any finite tax.

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temporarily increase actual output over potential output. This final effect is discussed in a subsequent section.

[17] Relative to the pre-law, current-policy baseline.

[18] Deregulation likely has two distinct effects relevant for determining appropriate policy. First, increased TFP will raise the marginal product of capital and thus r*. Second, deregulation leads to a more rapid increase in potential output than actual output.

Regulation hinders productivity growth, restricts capacity, and ultimately helps fuel inflation. Regulators may have good reason for doing so (maybe they value the snail), but we must be clear-eyed about the economic consequences.

Deregulation raises the neutral rate of interest by increasing the marginal product of capital.[19] Analysis by Dawson and Seater shows that half of the output effects of deregulatory policy are channeled improvements in total factor productivity (TFP), the key ingredient to greater living standards and higher real wages for workers.[20] Previous CEA research on the benefits of deregulatory efforts suggests a roughly 0.5 percent annual boost to growth over a 20-year period, whereas CEA research on new energy policies suggests something closer to a 0.1 percent annual boost over a 10-year period.[21] The cumulative effect of these policies is anywhere from a 3 to nearly 9 percent increase in TFP, translating to about a 0.1 to 0.2 percentage point increase in r*.[22]

Policies Impacting the Output Gap

Tax policy

I'd like to shift from r* to the third component of the Taylor rule, the output gap, which reflects actual production's strength relative to the economy's potential. Analogously, policymakers frequently think of the employment gap as the difference

[19] A standard Cobb–Douglas approach implies that a *k*% increase in TFP should induce a *k*% increase in r*.
[20] See John W. Dawson and John J. Seater (2013), "Federal Regulation and Aggregate Economic Growth," *Journal of Economic Growth,* vol. 18 (June), pp. 137–77.
[21] See Council of Economic Advisers (2025a), "The Economic Benefits of Current Deregulatory Efforts," white paper (Washington: CEA, June), https://www.whitehouse.gov/wp-content/uploads/2025/08/The-Economic-Benefits-of-Current-Deregulatory-Efforts.pdf; Council of Economic Advisers (2025b), "The Economic Benefits of Unleashing American Energy," white paper (Washington: CEA, July), https://www.whitehouse.gov/wp-content/uploads/2025/03/The-Economic-Benefits-of-Unleashing-American-Energy.pdf.
[22] This calculation again relies on an interest elasticity of investment implied by Council of Economic Advisers (2025c) and an interest elasticity of saving from Boskin (1978). Increase in r* is from a baseline of 1.5 percent. There are, of course, other items that might affect productivity growth, like artificial intelligence, but consistent with my discussion of inflation, I am assuming that current trends continue except for the policy shocks I am discussing.

between the actual unemployment rate and the lowest sustainable rate of unemployment that doesn't gin up inflation. While the substantial tax and spending cuts recently passed by the Congress increase net saving and therefore reduce r*, there are countervailing increases in appropriate policy via the output gap.

The tax law should significantly push out the economy's supply side, an important change to help minimize the potential for inflationary shocks. Reduced business and individual tax rates stimulate additional capital accumulation and labor supply. However, these work through expanding potential *and* actual GDP and thus should leave the output gap relatively unchanged. Aggregate demand, however, is also boosted by reduced taxes on seniors and lower-wage workers, balanced somewhat by cuts to entitlement spending and student lending.

Relative to a pretax law policy baseline, CEA calculations using Congressional Budget Office estimates found a static $80 billion or so reduction in revenue and a $130 billion or so reduction in annual spending over a decade. Despite a greater reduction in spending than taxes, the literature consistently finds the tax multiplier to be larger than the spending multiplier.[23] This implies an increase of actual output over potential of approximately $50 billion in the short run, or an increase in the output gap of nearly 0.2 percent of GDP. This translates into an increase in the appropriate federal funds rate of around 0.1 percentage point under the standard approach to the Taylor rule.

[23] Ramey's literature review finds an average tax multiplier of negative 1.78 and an average government spending multiplier of 0.74; see Valerie A. Ramey (2019), "Ten Years after the Financial Crisis: What Have We Learned from the Renaissance in Fiscal Research?" *Journal of Economic Perspectives,* vol. 33 (Spring), pp. 89–114.

The balanced-approach rule, which doubles the weight on the output gap and was favored by former Chairwoman Janet Yellen, would imply a 0.2 percentage point increase.[24]

Regulatory and energy policies

Returning to deregulatory and energy policies: Typically, when a regulatory barrier is removed, there is an immediate increase in potential output, but it takes time for actual output to catch up. I expect recent policies to have this effect.

Using the same estimates for TFP as I used earlier, this suggests 0.2 to 0.6 percentage point of downward pressure on the output gap over the next couple of years.[25] That translates into a policy rate that is 0.1 to 0.3 point lower under a standard Taylor rule, or doubly as strong under the balanced-approach rule.

Adding It All Up

To sum this all up, first we must adjust r* relative to a baseline based on the factors I've described. A variety of models reviewed by Gianluca Benigno and others arrive at a median real estimate for r* of 1.3 percent, and a range of around 1 to 2 percent.[26] Applying Okun's law with a natural unemployment rate of 4 percent, and PCE inflation at 2.6 percent, the standard Taylor rule approach implies the appropriate nominal fed funds rate prior to the forces considered today should be about 3.9 percent. A balanced approach suggests 3.6 percent. These are not all that far from where the FOMC has set interest rates!

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[24] See Janet Yellen (2017), "The Economic Outlook and the Conduct of Monetary Policy," speech delivered at the Stanford Institute for Economic Policy Research, Stanford University, Stanford, Calif., January 19, https://www.federalreserve.gov/newsevents/speech/yellen20170119a.htm.

[25] A persistence coefficient of 0.89 per quarter is estimated via a simple AR(1) regression on the output gap over time.

[26] See Gianluca Benigno, Boris Hofmann, Galo Nuno, and Damiano Sandri (2024), "Quo Vadis, r*? The Natural Rate of Interest after the Pandemic," *BIS Quarterly Review* (March), pp. 17–30.

Including the shocks I've considered, I get a new real r* that is 1 to 1.2 percentage points lower, or near zero. That sounds low, but I think it's important to take these models *seriously*, not *literally,* and as I've said, I think these models sometimes don't do a great job incorporating policy changes of the type I've discussed at the frequency I need. Instead, I suspect existing backward-looking estimates are too high because they insufficiently account for recent changes to fiscal and border policies that are depressing r*.

We can also look to financial markets. My preferred market-implied measure of r* is the five-year, five-year-forward rate on U.S. Treasury Inflation-Protected Securities. That's around 2.3 percent, meaning the new real r* would be 1.1 percent when applying new policy pressures.

Including the inflation and output channels along with the median model-implied r*, the fed funds rate should be around 2 to 2.25 percent under the standard Taylor rule approach. The balanced approach implies a rate around 1.5 to 2 percent. If we instead use the market-implied r*, these numbers would all be one full point higher.[27]

To help correct for the risk that the model-implied rate is too low, I weight its likelihood at two-thirds and give the market-implied r* a one-third weighting. I've given market pricing just one-third partially because I believe it is incorporating a policy premium to reflect uncertainty around trade policy. Using these weights results in an appropriate fed funds rate of approximately 2 percent under the balanced approach and

[27] All calculations in this paragraph sum up the previous calculations in this speech and add them to either of the initial r* estimates.

2.5 percent under the standard rule, although a simple summation ignores issues of timing.[28]

To be clear, I don't want to imply more precision than I think is possible in economics. Assumptions and approximations abound. Nevertheless, I must stake out a position, and this is my best ballpark estimation.

The upshot is that monetary policy is well into restrictive territory. Leaving short-term interest rates roughly 2 percentage points too tight risks unnecessary layoffs and higher unemployment. Thank you for this opportunity to share how I think about monetary policy at the moment; I'd be happy to take some questions.

[28] The slight discrepancies between this range and my forecasts in the Summary of Economic Projections are due to timing; some of the forces I've analyzed kick in over time, and others—like the output gaps—ameliorate over time.

	Standard Taylor Rule		Same under Both Rules		Balanced-Approach Taylor Rule	
Ex-Ante Appropriate FFR (bps)	426				396	
Effect on optimal FFR of…	Low	High	Low	High	Low	High
Forces affecting π_t:						
Rent disinflation			-47	-60		
Forces affecting r*:						
Deregulation + energy			4	20		
OBBB			-6	-31		
Population growth			-36	-36		
Trade policy			-62	-73		
Forces affecting $(y_t - \bar{y})$:						
Deregulation + energy	-11	-32			-23	-63
OBBB	8	8			16	16
Ex-Post Appropriate FFR (Midpoint) (bps)	249				206	

Note: Table weights for ex-ante r* are 2/3 from the model-implied results from Benigno and others (2024) and 1/3 from the market-implied rate from Treasury Inflation-Protected Securities. FFR is federal funds rate. OBBB is One Big Beautiful Bill.