A Theory of Slack

How Economic Slack Shapes Markets, Business Cycles, and Policies

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CHAPTER 20.

Ten takeaways

Modern business cycle models focus on prices and quantities, overlooking a key feature of real economies: pervasive slack. Accounting for slack is essential to understanding and managing business cycles. This is what we endeavored to do in this book. In this chapter, we review what we have learned by isolating ten takeaways for business cycle modeling and policy.

20.1. Slack is everywhere

Our first takeaway is that slack is everywhere. In almost all markets, it takes time and effort to sell and buy goods, so some goods remain unsold at all times. The underlying cause for pervasive slack is that in reality there is no centralized marketplace and goods and tastes differ, so buyers must spend time and effort to find the goods they desire. A manifestation of these selling and buying difficulties is that buyers and sellers are always relieved when they are able to trade. Another manifestation is the prevalence of long-term trading relationships: once a buyer and seller have found each other, they aim to keep trading for as long as possible.

A corollary is that the Walrasian model—in which trading is seamless and slack does not exist—is inadequate to describe real-world markets.

20.2. Slack fluctuations are the business cycle

Our second takeaway is that fluctuations in slack account for the vast majority of business cycle fluctuations. Indeed, productive capacity is built from the existing capital stock, labor force, and existing technological knowledge, which are acyclical. So productive capacity moves very smoothly over time. GDP and consumption, on the other hand, are fluctuating in the short run. These fluctuations are largely explained by fluctuations in slack on the labor and product markets.

A corollary is that macroeconomic models without slack miss a central element of business cycles and will struggle to describe business cycle fluctuations realistically.

20.3. Markets equilibrate not only via prices but also via tightness

Our third takeaway is that markets equilibrate through both prices and tightness—two complementary adjustment margins. And if prices are particularly rigid, or fixed, markets operate entirely through tightness. It is therefore possible to identify demand and supply shocks by examining the correlation between quantity and tightness on any market: a positive correlation indicates a demand shock while a negative correlation indicates a supply shock.

A corollary is that there is much to gain by switching from supply-demand analysis in price-quantity planes to supply-demand analysis in tightness-quantity planes.

20.4. Demand matters mostly in slack markets and supply in tight markets

Our fourth takeaway is that demand matters mostly in slack markets and supply mostly in tight markets. This means that markets are state dependent: they operate differently when they are slack and tight. A policy that boosts demand effectively stimulates output in slack times but not in tight times; conversely a policy that boosts supply effectively stimulates output in tight times but not in slack times.

A corollary is that supply-side policies are generally ineffective in slack markets—for instance, policies that push unemployed workers to search harder for jobs in bad times do not lower unemployment much.

20.5. US business cycles are mostly driven by aggregate demand shocks

Our fifth takeaway is that US business cycles are mostly driven by aggregate demand shocks. A clear manifestation of aggregate demand shocks is Okun's law: a negative relationship between detrended output and unemployment.

A corollary is that business cycle fluctuations can be stabilized with demand-side policies such as monetary policy and government spending. For instance, reducing the federal funds rate lowers the real interest rate, which makes consumption more appealing than saving and boosts aggregate demand. A higher aggregate demand raises market tightness and lowers unemployment.

20.6. Markets are generally inefficient

Our sixth takeaway is that markets are generally inefficient—the efficient market allocation is unlikely to prevail in reality. The reason is that price norms do not generally guarantee efficient outcomes. Furthermore, the efficient tightness can be computed from a few sufficient statistics, so it is possible to assess in real time how far from efficiency a specific market is.

A corollary is that one cannot expect market economies to operate efficiently without some government intervention. This is a core departure from the Walrasian guarantee of efficient markets.

20.7. The US economy has been excessively slack in the past century

Our seventh takeaway is that the US economy has been excessively slack in the past century. We estimate that the efficient tightness for the US economy is 1—corresponding to one vacant job per job seeker. In the past century the tightness has always been below 1, except in a few wartime episodes (World War 2, Korean War, Vietnam War) and around the pandemic. Moreover, tightness has fallen especially far below 1 in recessions. This finding implies that the US economy has spent most of the past century at less than full employment, and that it has fallen especially far below full employment in recessions. The unemployment rate that corresponds to this full-employment tightness is the full-employment unemployment rate (FERU), given by $u^* = \sqrt{uv}$.

A corollary is that the Federal Reserve and federal government have fallen short of their full-employment mandate over most of the past century.

20.8. Optimal monetary policy eliminates the tightness gap

Our eighth takeaway is that monetary policy should set interest rates to eliminate the tightness gap. This is true in a model in which inflation is fixed, but it is also true in models with endogenous inflation, as long as the divine coincidence holds—which seems realistic in the modern US economy. In such models, there is no trade-off between inflation and unemployment: higher tightness leads to higher inflation, but when tightness is efficient,

inflation is on target. If the divine coincidence fails, it is not optimal to eliminate the tightness gap, but the optimal policy still depends on the tightness gap.

A corollary is that it is not enough for the Federal Reserve to follow a Taylor rule based on inflation. In fact the Federal Reserve does not have to adopt an interest-rate rule at all: an interest-rate peg is perfectly fine. The peg can be adjusted as new slack data become available.

20.9. Optimal fiscal policy departs from microeconomic principles to reduce the tightness gap

Our ninth takeaway is that fiscal policy should depart from microeconomic principles to reduce the tightness gap. For example, when government spending is not a perfect substitute for private spending, it is not optimal to use government spending to eliminate the tightness gap. Instead, optimal government spending should be above the Samuelson rule in slack times to reduce—but not eliminate—the tightness gap.

A corollary is that multipliers larger than 1 are not necessary to justify countercyclical government spending. Any positive multiplier justifies countercyclical government spending; the only justification for acyclical spending is a zero multiplier.

This takeaway is not limited to government spending: it applies to any fiscal policy that affects tightness. One such policy is unemployment insurance, which should be more generous than the Baily-Chetty level to raise market tightness in slack times.

20.10. Recessions are detectable early from unemployment and vacancy data

Our tenth and final takeaway is that recessions are detectable early using unemployment and vacancy data. Fluctuations in slack are early indicators of recessions, so monitoring slack allows an early, proactive response to economic downturns.

A corollary is that it is difficult to detect recessions early by using only data on quantities (such as GDP or industrial production) and ignoring data on slack.

20.11. Summary: Some unconventional aspects of the theory of slack

The theory of slack developed in this book overturns several assumptions and implications of conventional macroeconomics. In reality, markets rarely clear: trading takes time, goods remain unsold, and jobs remain vacant. Slack is thus an inherent feature of economic activity, and fluctuations in slack are the essence of business cycles. Because price rigidity is not a pathology but a ubiquitous feature of modern markets, markets equilibrate principally through tightness. Finally, free markets cannot be presumed effi-

cient: efficiency requires the appropriate price norm, supporting an appropriate level of tightness.

The slack framework also redefines macroeconomic policy. Standard measures of full employment such as the NAIRU fail to capture this condition, explaining why the US economy has long operated below full employment and has therefore been inefficiently slack. Monetary policy should target the tightness gap rather than follow a Taylor rule, while fiscal and other macropolicies should deviate from microeconomic principles to reduce the tightness gap whenever monetary policy is constrained. Finally, because slack is strongly cyclical, unemployment and vacancy data provide valuable indicators of recessions.

Taken together, these insights replace the price-centered, market-clearing paradigm with a tightness-centered, matching-based view of the economy, where managing slack is the key to achieving efficiency and stability.