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A TAXONOMY OF SUPPLY SHOCKS AND THEIR EFFECTS ON INFLATION

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DISCLOSURES

1. Introduction

The goal of this paper is to provide a systematic framework for understanding the varieties of supply shocks that influence inflation and other key economic outcomes. The last decade has demonstrated that supply-side disruptions—ranging from energy price surges to shortages of crucial industrial inputs—can drive inflation in ways that challenge traditional demand-focused models and policy responses.

This paper synthesizes the recent (and less-recent) economic literature to establish a taxonomy of the main types of supply shocks that could affect inflation. It further clarifies the principal channels through which these shocks affect prices and output and diagnoses the economic features that can amplify shocks beyond their direct effects on higher production costs. A literature review of 88 pieces of research reveals eight distinct shock types, six primary transmission channels, and seven major amplification mechanisms.

The creation of a taxonomy and classification presented in this paper inevitably required extensive judgment. The landscape of supply shocks and their economic effects is complex, and categorizations are, by necessity, interpretive rather than fixed or exhaustive. In many instances, different readers might reasonably reach somewhat different conclusions about how to classify a given paper, shock, or channel. The primary goal here is not to impose a hard-and-fast framework but rather to distill broad and recurring patterns that emerge across the literature.

This taxonomy attempts to reflect the current state of the literature, identifying which shock types, transmission channels, and amplification mechanisms appear most frequently across the 88 papers reviewed. While the patterns may reflect what aspects of supply shocks are most potentially important, the taxonomy may help researchers identify gaps—areas that are underexplored or where conceptual connections between supply shocks and inflation could be clarified with further work. While not every paper reviewed was centrally focused on supply shocks as a driver of inflation, studies were included when the pathway from an identified economic effect to inflation seemed clear and straightforward. The analysis focuses on identifying shock types, transmission channels, and amplification mechanisms rather than evaluating empirical magnitudes or comparing theoretical versus empirical approaches.

This review focuses on the kinds of supply shocks that can boost inflation, such as negative productivity shocks or positive commodity price shocks. Shocks with the opposite sign would tend to reduce inflation—these are not the subject here. Importantly, a positive shock to supply or a drop in input prices can transmit through the economy in different ways and may not trigger the same amplification mechanisms. For example, many models and empirical papers build in downward wage rigidity, which means that wages adjust more slowly or incompletely in response to reductions in labor demand than to increases in demand. As a result, the channels and consequences of shocks that decrease inflation are somewhat distinct from those that increase it, and thus they are not systematically addressed in this analysis.

Two key findings emerge from the analysis:

First, some kinds of supply shocks and certain characteristics of the economy are more prone to result in higher inflation. Critical component shocks, by their nature of being required in production with no available substitutes, have a straightforward pathway to increasing inflation. If an economy is characterized by opaque input-output linkages and supply chain networks, most kinds of supply shocks can be amplified. In addition, if inflation expectations are easily unanchored, for example if the central bank lacks inflation fighting credibility, temporary supply shocks can have lasting effects on inflation.

Second, amplification of a supply shock can be particularly significant when multiple amplification mechanisms are at play. For example, a reduction in the supply of semiconductor chips has a particularly large effect on inflation when it is amplified by low substitutability in production functions, low initial inventories, and network dependencies.

The remainder of this paper proceeds as follows. Section 2 describes the eight types of supply shocks identified in the literature. Section 3 examines the six primary transmission channels through which these shocks affect prices and output. Section 4 analyzes the seven major amplification mechanisms that determine whether shocks cause modest, transitory price increases or trigger persistent, economy-wide inflation. Section 5 examines each shock type in turn, identifying the amplification mechanisms most commonly observed for each and explaining why certain shock types pose greater inflationary risks. Section 6 discusses several mechanisms that can dampen or even reverse the typical inflationary response to supply shocks. The conclusion includes some implications for fiscal and monetary policymakers. The appendix summarizes the classification of all 88 papers.

2. Supply shocks

This analysis identifies eight distinct types of supply shocks that potentially affect inflation, as shown in table 1. Many studies among the 88 summarized here examine multiple shock types simultaneously. The frequency of study reflects the attention different shocks have received in the recent literature.

TABLE 1

Types of supply shocks and number of instances in the academic literature

Shock Type	Individual Shock Instances
Global Supply Chain Disruption	27
Productivity Shock	21
Pandemic Shock	17
Commodity Price Shock	15
Natural Disaster Shock	10
Labor Supply Shock	9
Critical Input Shock	8
Import Price Shock	8
Total Individual Shock Instances	**115**

SHOCKS THAT ARE COMMON IN THE LITERATURE

Shocks that are common in the literature include productivity shocks—often used as a stand-in for broad disturbances—and commodity price shocks, such as oil price shocks, which have long been analyzed as classic examples of supply shocks. Supply chain disruptions dominate the recent literature (reflecting their critical importance for the economy from 2020 to 2023).

GLOBAL SUPPLY CHAIN DISRUPTIONS

Key characteristics: Disruptions affecting interconnected production systems across countries. These shocks are distinguished by their ability to propagate through multiple tiers of suppliers simultaneously, creating cascading effects far beyond the initial disruption point. These interruptions can mean higher shipping costs, shipping bottlenecks, and port slowdowns. For example, Ascari et. al (2024) explore global supply chain disruptions by examining how bottlenecks, shipping cost surges, and delivery delays increase imported intermediate input costs.

What makes them distinct: Unlike other shocks that affect specific inputs or sectors, supply chain disruptions create system-wide vulnerabilities by breaking the links between otherwise healthy production nodes. The shock lies in the transportation and relationship failures, not in the productive capacity itself.

COMMODITY PRICE SHOCKS

Key characteristics: Rapid increases in prices of widely-used, homogeneous raw materials that serve as inputs across many sectors. These shocks are distinguished by their broad-based impact and high visibility to both producers and consumers. For example, Blomberg and Harris (1995) explore how shocks in a range of commodity price indices and prices of several types of commodities affect producer prices and then pass through to consumer prices.

What makes them distinct: These shocks affect nearly all sectors simultaneously but with varying intensities depending on input intensity. These shocks can affect inflation expectations because commodity prices are highly visible.

PRODUCTIVITY SHOCKS

Key characteristics: Sudden reductions in the efficiency with which inputs are converted to outputs, affecting the fundamental production relationships within firms or sectors. These can be technological, regulatory, or organizational in nature. For example, Eickmeier and Hofmann (2025) explore productivity shocks by using a structural factor model with sign restrictions to disentangle demand and supply factors, showing how negative productivity shocks reduce supply and increase inflation.

What makes them distinct: Unlike input cost increases, productivity shocks change the production function itself—the same inputs now produce fewer outputs.

SHOCKS TO PARTICULAR INPUTS

Three kinds of shocks affect the availability or cost of specific production inputs: import price shocks, critical component shocks, and labor supply shocks.

IMPORT PRICE SHOCKS

Key characteristics: Policy-driven or market-driven increases in the cost of foreign goods, affecting both intermediate inputs and final products. These shocks can stem from trade disputes, currency movements, or foreign supply disruptions. For example, Alfaro and Chor (2023) explore import price shocks arising from U.S. tariffs on Chinese goods by documenting how these policy-induced cost increases led to systematic reallocation of import sourcing toward Vietnam and Mexico.

What makes them distinct: The creation of differential impacts between import-intensive and domestic-focused firms, potentially shifting competitive dynamics. Furthermore, the effects depend heavily on the availability of domestic substitutes and the time needed to develop them.

CRITICAL COMPONENT SHOCKS

Key characteristics: Shortages of highly specialized inputs that cannot be easily substituted and are essential for production in multiple downstream sectors. These shocks often involve technologically sophisticated components with concentrated production. For example, Dunn and Leibovici (2021)

explore critical component shocks by examining how semiconductor shortages completely halted production across multiple manufacturing sectors.

What makes them distinct: Low substitutability creates production bottlenecks that can halt output rather than just raising costs.

LABOR SUPPLY SHOCKS

Key characteristics: Sudden reductions in worker availability at prevailing wages, whether through changes in preferences to participate in the labor force, to work a certain number of hours, or to work in a particular industry. For example, Faberman et. al (2022) explore labor supply shocks by analyzing how the COVID-19 pandemic reduced workers' willingness to supply labor.

What makes them distinct: Impact depends on skill specificity, labor mobility across sectors, and substitutability with other inputs. When workers have specialized skills that can't transfer easily and when labor can't be replaced by other inputs, the inflationary effect is generally larger.

SHOCKS THAT ARE EVENTS

Natural disasters and pandemics differ from other supply shocks in that they are discrete events.

NATURAL DISASTER SHOCKS

Key characteristics: Geographically concentrated physical destruction from events such as earthquakes, floods, hurricanes, or wildfires. These shocks create supply disruptions through infrastructure damage, productive capacity loss, and transportation network failures. For example, Bilal and Stock (2025) explore natural disaster shocks by examining how extreme weather events affect economic productivity depending on how effectively regions and sectors have adapted to the potential for such shocks.

What makes them distinct: Effects are geographically concentrated at first but then propagate more broadly.

PANDEMIC SHOCKS

Key characteristics: Economy-wide disruptions that simultaneously affect production, consumption, and distribution across multiple sectors. For example, Ball et. al (2022) explores how the pandemic affected inflation through a number of channels, including the labor market, input costs, and supply chains.

What makes them distinct: This shock type directly constrains human activity itself, creating unique transmission patterns through health risks and behavioral changes.

3. Transmission channels

Supply shocks affect inflation because they are propagated through the economy via specific transmission channels. This analysis identifies six primary channels through which the eight shock types affect inflation (or affect output in a way that will in turn affect inflation). Understanding these pathways is crucial because the same shock can have different economic impacts depending on how it is transmitted to through the economy.

The literature reveals important patterns in shock-channel relationships. Some transmission channels are highly versatile, carrying multiple types of shocks (the production function channel is quite versatile), while others are specialized for particular disturbances (labor market channels primarily transmit labor supply shocks). Many papers examine complex scenarios where a single shock propagates through multiple channels simultaneously or where different shocks within the same study operate through distinct pathways. Recognizing these systematic relationships helps predict which channels will be most relevant for different types of supply disruptions.

OVERVIEW OF SIX PRIMARY CHANNELS

The literature highlights the following key transmission paths:

1. **Production function shocks** transmit by raising firms' production costs through reduced productivity or increased input prices, directly affecting the cost structure of goods and services production. For example, Afrouzi and Bhattarai (2023) demonstrate how commodity price and productivity shocks transmit through firms' production functions.

2. **Supply chain shocks** transmit through breakdowns in multi-tier supplier networks, restricting the flow of intermediate goods and creating bottlenecks that propagate across interconnected production systems. Finck and Tillmann (2023) explore the way supply shocks in one country or in one part of the supply chain can be transmitted through supply chains, such as the international container trade.

3. **Network shocks** transmit through input-output linkages where disruption at one firm affects both its suppliers (upstream) and customers (downstream), creating cascading effects throughout the production network. For example, Chaney (2014) demonstrates that shocks transmit through networks of trading relationships.

4. **Labor market shocks** transmit through changes in labor availability or costs, affecting firms' ability to maintain production levels at prevailing wage rates. Brinca et. al (2021) demonstrate that labor supply shocks transmit through sectoral heterogeneity in labor market impacts, with some sectors experiencing disproportionately large disruptions based on the degree of labor supply reduction.

5. **Consumer spending shocks** transmit through behavioral demand responses—such as stockpiling, substitution away from affected goods, or precautionary saving—that redistribute economic activity across sectors. Levy (2024) documents that pandemic shocks transmitted

through dramatic shifts in consumer spending patterns, which created demand surges that overwhelmed logistics networks and depleted inventories simultaneously.

6. **Pricing power shocks** transmit by altering competitive dynamics, enabling some firms to raise markups over costs when competitors face greater constraints or when market concentration increases. For example, Franzoni et. al (2023) show that supply shocks alter pricing power of superstar firms that face smaller disruptions from those shocks.

SHOCK-TRANSMISSION CHANNEL PATTERNS IN THE LITERATURE

There are clear patterns in the literature in how different shock types transmit through transmission channels (see Table 2). Some channels demonstrate remarkable versatility—the production function channel transmits all eight shock types—while others show strong specialization. In particular, the labor market channel primarily transmits pandemic shocks, which can in turn affect people's willingness to work, and—more directly—labor supply shocks. Complex shocks like global supply chain disruptions and pandemic shocks routinely operate through multiple channels simultaneously, creating system-wide vulnerabilities rather than isolated pressure points. The consumer spending channel transmits shocks that alter household behavior, such as pandemic shocks, driving demand composition changes and stockpiling behaviors. In addition, the pricing power channel transmits shocks that create competitive advantages for some firms over others, enabling some firms to raise prices without losing market share.

TABLE 2

Shock-channel frequency matrix

Shock Type	Production Function	Supply Chain	Network	Labor Market	Consumer Spending	Pricing Power	TOTAL
Global Supply Chain Disruption	16	9	4	0	1	1	31
Pandemic Shock	6	6	2	5	4	0	23
Productivity Shock	13	0	9	0	0	0	22
Commodity Price Shock	13	1	2	1	0	0	17
Natural Disaster Shock	4	5	1	0	1	0	11
Import Price Shock	6	1	1	0	0	1	9
Critical Input Shock	3	5	1	0	0	1	10
Labor Supply Shock	1	1	0	6	0	1	9
CHANNEL TOTALS	**62**	**28**	**20**	**12**	**6**	**4**	**132**

GLOBAL SUPPLY CHAIN DISRUPTIONS

Production function: Higher transportation costs increase landed prices of intermediate goods.
Supply chain: Initial disruptions cascade through multi-tier networks via delays and cost increases.
Network: Propagates through input-output relationships affecting suppliers and customers.
Consumer spending: Import delays and higher costs shift consumer demand and encourage stockpiling.
Pricing power: Firms with resilient supply chains gain competitive advantages.

PANDEMIC SHOCKS

Production function: Lockdowns and safety measures increase production costs.
Supply chain: Border closures and outbreaks create shipment delays and port congestion
Network: Disruptions in one country or sector cascade through trading relationships.
Labor market: Health risks reduce labor supply and drive up wage costs.
Consumer spending: Contagion fears and lockdowns alter spending patterns and trigger hoarding.

PRODUCTIVITY SHOCKS

Production function: Reduced efficiency increases costs of producing a given amount of output.
Network: Efficiency losses propagate through input-output linkages to connected firms.

COMMODITY PRICE SHOCKS

Production function: Raw material cost increases raise manufacturing costs.
Labor market: Higher input costs can reduce labor demand in affected sectors.
Network: Cost increases propagate through production linkages to downstream industries.

NATURAL DISASTER SHOCKS

Production function: Physical destruction of productive capacity raises costs.
Supply chain: Infrastructure damage disrupts supplier networks.
Network: Cascades through interconnected production relationships.
Consumer spending: Drives demand composition changes and emergency stockpiling behaviors.

IMPORT PRICE SHOCKS

Production function: Higher costs for imported intermediate goods raise production expenses.
Supply chain: Cost increases from specific countries trigger supply chain reorganization.
Network: Propagates through input-output linkages affecting upstream and downstream firms.
Pricing power: Domestic firms not reliant on imports gain competitive advantages.

CRITICAL COMPONENT SHOCKS

Production function: Essential inputs become expensive or unavailable, halting production.
Supply chain: Disrupted suppliers force downstream firms to scramble for alternative sources.
Network: Creates upstream demand reduction and downstream cost increases across interconnected firms.
Pricing power: Firms maintaining input access gain competitive advantages.

LABOR SUPPLY SHOCKS

Production function: Labor shortages reduce manufacture of inputs, raising production costs
Supply chain: Worker shortages create breakdowns in supplier networks.
Labor market: Direct increase in labor costs as firms compete for scarce workers.
Pricing power: Workers demand higher wage markups when labor markets tighten.

4. Amplification mechanisms

A key insight from the literature is that the magnitude and persistence of inflationary effects or other economic effects from supply shocks depends critically on amplification mechanisms: structural features of the economy that magnify shocks as they transmit through production systems and markets. The literature reveals three broad categories of amplification: constraints on production (where firms face significant hurdles to increase output regardless of price incentives), network contagion (where shocks cascade through interconnected supplier relationships), and behavioral feedback loops (such as rising inflation expectations or consumer stockpiling that reinforce initial price pressures).

This analysis identifies seven broad amplification mechanisms that emerge across the literature:

1. RIGID PRODUCTION: LOW SUBSTITUTABILITY AND FACTOR MOBILITY

When firms cannot substitute away from disrupted inputs or reallocate factors of production across sectors, supply shocks generate disproportionately large inflationary effects. Critical input shortages become particularly amplified because firms lack alternative production methods—a local disruption can cascade through interconnected sectors with economy-wide consequences. These amplification mechanisms reflect deep, structural characteristics of production technologies and factor markets, making their inflationary effects both difficult to prevent and persistent over time.

2. PRICE AND WAGE RIGIDITY

Price and wage rigidities create complex amplification dynamics that can both dampen and magnify inflationary effects. When input costs rise but firms adjust prices infrequently, initial inflation may be muted but then more persistent over time. When cost shocks reduce labor demand but nominal wages resist downward adjustment, the resulting inflationary pressure exceeds what would occur under flexible wages. These rigidities reflect fundamental market frictions—including menu costs, long-term contracts, and social norms around wage cuts—that make inflationary effects difficult to prevent and tend to prolong adjustment periods.

3. CAPACITY AND INVENTORY VULNERABILITIES

Lean inventory practices and tight capacity constraints magnify supply shocks by eliminating buffers that could absorb disruptions. When firms operate with minimal inventories, even small supply interruptions trigger delivery delays, production stoppages, and sharp price spikes as stockouts emerge. Similarly, when firms operate near full capacity, the marginal costs of increasing production rise steeply, amplifying price responses to demand surges or supply constraints. Unlike structural rigidities, these amplification mechanisms reflect pre-shock firm decisions about inventory management and capacity utilization—meaning firms can mitigate future amplification through costly investments in redundancy and spare capacity, though such prevention must occur before shocks materialize.

4. NETWORK AND SUPPLY CHAIN PROPAGATION

Complex production networks and multi-tiered supply chains create amplification through cascading effects that propagate both upstream and downstream. Empirical and theoretical studies demonstrate that disruptions at central nodes or key suppliers multiply across interconnected firms as cost increases ripple through the network. Amplification intensifies when supplier relationships involve relationship-specific investments that are costly and time-consuming to replicate—meaning firms cannot quickly switch to alternative suppliers when disruptions occur. While these network characteristics are difficult to adjust in real time once shocks hit, firms can reduce future amplification through preemptive, costly investments in supply chain diversification, redundant sourcing relationships, and network resilience.

5. EXPECTATIONS FEEDBACK

Supply shocks affecting highly visible prices—particularly energy and food—trigger especially strong amplification through inflation expectations channels. When consumers and firms anticipate sustained price increases, their behavioral responses (such as

preemptive price increases) can become self-fulfilling, creating feedback loops that magnify and perpetuate the initial inflationary impulse. The strength of this amplification mechanism depends critically on central bank credibility: Well-anchored long-run inflation expectations can limit feedback effects.

6. PRICING POWER

Supply shocks can amplify inflation by altering competitive dynamics in ways that increase firms' pricing power. When shocks differentially affect competitors—for example, by disrupting some firms' supply chains while leaving others intact—less-affected firms may exploit their competitive advantage by raising prices beyond what cost increases alone would justify. This amplification reflects both market structure (degree of concentration) and strategic firm behavior during disruptions. Unlike structural rigidities, this mechanism can be mitigated through policies that maintain competitive markets, particularly during periods of supply shocks.

7. OPTIMAL MONETARY POLICY ALLOWS FOR MORE INFLATION

Certain supply shocks create conditions where optimal monetary policy tolerates higher inflation than it otherwise would. A shock that reduces potential output increases the output gap and creates inflationary pressures that generally require more restrictive monetary policy. However, if those same shocks create distortions—such as precautionary savings behavior or inefficient resource reallocation from wage rigidities—overly restrictive monetary policy can trigger self-reinforcing contractionary dynamics that lead to increases in the unemployment rate and other evidence of slack in the economy. In these circumstances, monetary policy that accepts elevated inflation following a supply shock may be preferable. This amplification mechanism differs from others because it reflects optimal policy responses to underlying frictions that owe to structural features of the economy.

The literature reveals important patterns in how amplification mechanisms interact with transmission channels. Some amplification mechanisms are highly channel-specific, concentrated in particular transmission pathways. Wage rigidity amplifications, for instance, appear predominantly when shocks transmit through labor markets, while substitutability constraints and relationship-specific investments figure most prominently in supply chain transmission. Inventory and capacity constraints generally amplify shocks when transmission occurs through supply chains and production functions.

Other amplification mechanisms operate across multiple transmission channels, suggesting they represent broader economic forces rather than channel-specific frictions. Inflation expectations feedback amplifies shocks regardless of whether transmitted through production functions, supply chains, or labor markets. Similarly, input-output network propagation amplifies disruptions whether it initially affects firms' cost structures or supply chain relationships. These cross-channel amplifications indicate that certain features of the macroeconomy—such as the formation of inflation expectations and the structure of production networks—create system-wide vulnerabilities that magnify supply shocks independent of their initial entry point into the economy.

5. Supply shocks and amplification mechanisms

The dynamics of inflationary effects from supply shocks depend on amplification mechanisms that intensify initial disruptions. The literature reveals that different shock types are associated with distinct amplification mechanisms, leading the effects of shocks to differ in their breadth, magnitude, and persistence. This section examines each of the eight shock types in turn, identifying the amplification mechanisms most commonly observed in the literature.

GLOBAL SUPPLY CHAIN DISRUPTION

Network propagation effects: Network propagation effects amplify global supply chain disruptions through cascading failures across multi-tiered production relationships. Antràs and Chor (2022) demonstrate how shocks propagate as disrupted inputs are necessary to produce outputs that themselves serve as inputs for subsequent production stages, creating multiplicative effects through the supply chain. Acemoglu and Tahbaz-Salehi (2025) show that even small shocks can trigger the dissolution of relationship-specific investments between firms, which then cascades through input-output linkages to dissolve additional supplier relationships throughout the network. Baqaee (2018) provides structural calibration evidence that disruptions at a single key supplier can generate output volatility triple that of a frictionless economy as input-output network dependencies transmit and amplify shocks system-wide.

Rigid production function: Rigid production functions amplify supply chain disruptions when firms cannot substitute away from disrupted inputs. Bai et. al (2024) demonstrate that producers facing supply chain disruptions operate with spare capacity because they cannot adjust their input mix to utilize existing resources, leaving production constrained by the unavailable inputs. Isaacson and Rubinton (2023) show how shocks to a particular transportation method are amplified when firms lack the ability to substitute toward unaffected transportation methods.

Low inventory buffer: Low inventory buffers amplify supply chain shocks by eliminating cushions that could absorb temporary disruptions. Alessandria et. al (2023) demonstrate that supply chain shocks that lengthen delivery times generate larger economic effects when firms operate with minimal inventories because lean inventory practices leave no margin to weather delays. The resulting stockouts of critical inputs and outputs then cascade through input-output linkages, propagating the initial disruption across interconnected firms and sectors.

Increase in inflation expectations: Inflation expectations amplify supply chain disruptions by enabling greater cost pass-through and creating self-reinforcing price dynamics. De Santis (2024) establishes linkages between supply chain disruptions and rising inflation expectations. In addition, Gordon and Clark. (2023) argue that firms achieve higher pass-through rates when cost increases are particularly large.

PANDEMIC SHOCK

Rigid production function: Rigid production functions amplify pandemic shocks when firms cannot substitute away from inputs that become scarce or when factors of production cannot move efficiently across sectors. Giovanni et al. (2022) and Bonadio (2021) both demonstrate how limited factor mobility across sectors magnified the economic effects of the COVID-19 pandemic.

Low inventory buffer and capacity constraints: Low inventory buffers and capacity constraints amplify pandemic shocks because there is less economic slack that could absorb demand-supply mismatches. Cavallo and Kryvtsov (2023) document how convex inventory adjustment costs following the COVID-19 pandemic magnified price responses: Firms racing to rebuild depleted inventories faced sharply rising marginal costs. Forbes et al. (2021) demonstrate that the inflation response to the COVID-19 shock was particularly severe because the disruption significantly

reduced economic slack, pushing the economy into steeper regions of the Phillips curve where inflationary pressures intensify nonlinearly.

Network propagation effects: Network propagation effects amplify pandemic shocks as disruptions affecting suppliers across multiple countries cascade through complex input-output linkages. Santacreu and LaBelle (2022) demonstrate how firms' reliance on disrupted foreign suppliers, particularly in industries with concentrated sourcing relationships, generated far-reaching inflationary consequences that extended well beyond the directly affected sectors, with production constraints and cost increases propagating through interconnected supply networks.

Increase in inflation expectations: Inflation expectations amplify pandemic shocks through multiple reinforcing channels, though the strength of amplification depends on expectation anchoring. Coibion et al. (2023) show how particularly salient price increases in visible goods categories elevated household inflation perceptions and expectations. Bernanke and Blanchard (2025) demonstrate that workers' expectations for wages to keep pace with rising prices created wage-price dynamics that amplified inflationary pressures, though the same study finds that anchored long-run inflation expectations ultimately limited these feedback mechanisms during the COVID-19 shock. Harding et al. (2023) establish that firms more readily raised prices when inflation was already elevated.

PRODUCTIVITY SHOCK

Rigid production function: Rigid production functions amplify negative productivity shocks when firms cannot substitute away from inputs or production methods that have become less efficient. Pellet and Tahbaz-Salehi (2023) demonstrate how high adjustment costs in changing input mixes prevent firms from responding flexibly to productivity declines, such that firms continue using inefficient production processes in a way that magnifies the economic impact of the shock.

Network propagation effects: Network propagation effects amplify negative productivity shocks as they cascade through input-output linkages and financial relationships. Barrot and Sauvagnat (2016) demonstrate how firms experiencing negative productivity shocks may become unable to make required payments to suppliers, triggering liquidity shocks that propagate upstream through the payment network and create cascading failures. Baqaee and Farhi (2019) show that amplification intensifies when production factors are complements rather than substitutes and when labor cannot be efficiently reallocated across sectors.

Increase in inflation expectations: Inflation expectations amplify productivity shocks through visibility and breadth effects that shift perceptions of future inflation. When productivity shocks generate larger price increases, firms gain greater ability to pass through additional costs without losing market share because the magnitude of the shock itself provides justification for price adjustments and reduces consumer resistance. Beaudry et al. (2025) demonstrate that inflation expectations respond more strongly to synchronized shocks affecting multiple sectors simultaneously or to shocks concentrated in highly visible sectors such as food and energy, where price changes are readily observed by consumers.

Low inventory buffer and capacity constraints: Low inventory buffers and capacity constraints amplify productivity shocks by creating nonlinear cost responses as firms approach production limits. When productivity declines reduce effective capacity or draw down inventory buffers, even modest additional demand or further supply disruptions trigger steep cost escalations as firms operate on the steepest portions of their supply curves. Comin et al. (2023) show that when supply shocks mean that capacity constraints bind, firms increase markups. Boehm and Pandalai-Nayar (2022) demonstrate how marginal costs increase at accelerating rates when capacity utilization approaches high levels, meaning that productivity shocks forcing firms toward their capacity constraints generate disproportionately large price increases.

Optimal monetary policy allows for more inflation: Optimal monetary policy can amplify the inflationary effects of negative productivity shocks when complementary frictions create contractionary

feedback loops. Challe (2020) demonstrates how price stickiness can cause unemployment to rise following a negative productivity shock, triggering increased saving that depresses aggregate demand and further raises unemployment. In such environments, optimal monetary policy accepts higher inflation to prevent self-reinforcing contractionary spirals, instead of overly restrictive policy that would amplify unemployment effects. Similarly, Rubbo (2023) demonstrates that downward nominal wage rigidity leads to inefficient resource allocation after a productivity shock. The paper shows that optimal monetary policy in this environment maintains output above the efficient level and tolerates higher consumer price inflation.

Market power: Market power amplifies productivity shocks by enabling firms in concentrated industries to pass through cost increases more fully into prices. Bräuning et al. (2022) demonstrate that the pass-through rate of cost shocks into producer prices increases significantly with industry concentration, as firms with greater market power face less competitive pressure to absorb productivity-related cost increases and can instead shift a larger share of those costs to customers through higher prices.

COMMODITY PRICE SHOCK

Rigid production: Rigid production functions amplify commodity price shocks when production depends heavily on the affected commodity and firms cannot substitute toward alternative inputs. Di Giovanni et al. (2023) demonstrate that energy price shocks during the pandemic generated particularly large inflationary impacts because firms lacked the technical ability to substitute away from energy inputs in their production processes.

Relationships and network propagation: Network propagation effects amplify commodity price shocks as cost increases cascade through production networks, affecting both upstream suppliers of alternative inputs and downstream purchasers. Auer et al. (2019) demonstrate how commodity price shocks propagate through input-output relationships.

Price and wage rigidity: Price and wage rigidities amplify commodity price shocks through asymmetric adjustment dynamics and sustained cost pressures. Gagliardone and Gertler (2024) demonstrate that wage rigidity prevents nominal wages from falling when commodity price increases reduce labor productivity, thereby maintaining elevated marginal costs and amplifying inflationary effects as firms cannot reduce their wage bills despite lower output per worker. Bunn et al. (2022) show that menu costs create asymmetric price adjustment because firms respond more quickly to commodity price increases than to decreases, meaning that upward price movements transmit rapidly while downward adjustments lag, amplifying the aggregate inflationary impact of commodity price volatility.

Increase in inflation expectations: Inflation expectations amplify commodity price shocks through the high visibility of affected prices, but the effect depends on the degree to which inflation expectations are well anchored. Beaudry et al. (2025) demonstrate that commodity price increases in particularly salient categories—such as gasoline and food—generate outsized effects on inflation expectations because consumers frequently observe and directly experience these prices, making them disproportionately influential in shaping perceptions of broader inflation trends. Gelos and Ustyugova (2017) establish that the degree to which inflation expectations remain anchored in the face of commodity price shocks depends critically on institutional quality, particularly central bank credibility, with strong institutions preventing temporary commodity price spikes from unhinging longer-term expectations.

NATURAL DISASTER SHOCK

Rigid production function: Rigid production functions amplify natural disaster shocks when firms cannot substitute away from inputs produced in affected regions. Boehm et al. (2019) demonstrate that U.S. manufacturers highly dependent on specialized Japanese components experienced severe output declines following the earthquake because near-zero short-run substitutability meant they could not adapt their production processes to use alternative inputs, forcing them to halt or drastically curtail production despite having access to other factors of production.

Relationships and network propagation: Network propagation effects amplify natural disaster shocks as disruptions cascade through input-output relationships and relationship-specific investments. Barrot and Sauvagnat (2016) demonstrate that natural disasters affecting unique or highly specialized suppliers propagate through customer networks with multiplicative effects because a single supplier's loss affects multiple downstream customers. Carvalho et al. (2021) shows that when the earthquake destroyed certain suppliers, downstream firms could not quickly establish replacement sourcing relationships because supplier connections involve costly relationship-specific investments and time-intensive development, prolonging production disruptions.

Inventory buffer and capacity constraints: Low inventory buffers and capacity constraints amplify natural disaster shocks by eliminating margins to absorb supply disruptions and creating feedback loops through consumer behavior. World Bank (2020) demonstrates that firms operating with low pre-disaster inventory levels experience amplified effects from natural disasters because they lack buffers to maintain supply continuity during production interruptions. Cavallo et al. (2013) shows how stockouts—whether caused by production disruptions or demand surges—trigger hoarding behavior that further depletes inventories and exacerbates shortages, creating self-reinforcing cycles where initial supply constraints generate behavioral responses that magnify the original disruption.

IMPORT PRICE SHOCK

Rigid production function: Rigid production functions amplify import price shocks when firms cannot substitute toward domestic alternatives for imported inputs. Amiti et al. (2021) demonstrate how increased costs for imported intermediate goods are magnified transmit through domestic production cost structures when firms lack the technical ability or available domestic substitutes to adjust their input sourcing.

Price rigidity: Price rigidity changes the effects of import price shocks by creating protracted adjustment dynamics and resource misallocation across production chains. Wei and Xie (2020) demonstrate that price stickiness in upstream firms using imported intermediates prevents rapid cost pass-through, leading to inefficient resource allocation and sluggish price adjustment cascading to downstream firms.

Pricing power: Pricing power amplifies import price shocks when domestic firms exploit reduced competitive pressure to raise markups. Amiti et al. (2024) demonstrate that when foreign input costs rise and import-reliant competitors face higher costs or supply constraints, domestic firms increase their own markups even when their direct costs have not risen proportionally because weakened import competition allows them to capture greater margins without losing market share, thereby amplifying aggregate inflation beyond what direct cost pass-through alone would generate.

CRITICAL INPUT SHOCK

Rigid production function: Rigid production functions amplify critical input shocks because firms lack substitution possibilities when essential inputs become scarce or expensive. Lorenzoni and Werning (2023) demonstrate that limited substitutability between critical inputs and labor intensifies inflationary dynamics following supply disruptions: Labor productivity declines when the essential input becomes scarce, but workers' wage demands and consumption aspirations do not adjust proportionally downward, creating persistent cost-price pressures.

Relationships and network propagation: Network propagation effects amplify critical input shocks as disruptions cascade through production relationships and relationship-specific investments prevent rapid supplier switching. Barrot and Sauvagnat (2016) demonstrate that firms seeking to replace disrupted critical input suppliers must incur substantial switching costs and time delays to establish alternative sourcing relationships, prolonging shortages and cost pressures. Acemoglu et al. (2016) show how shocks to centrally important sectors propagate throughout interconnected supply chain networks with multiplicative effects. Elliott and Jackson (2024) model how critical input shortages can halt production entirely across all downstream firms dependent on the disrupted input when no short-

run substitutes exist, demonstrating how network dependencies transform localized shortages into system-wide production stoppages.

Inventory buffer and capacity constraints: Low inventory buffers amplify critical input shocks by eliminating cushions that could maintain production continuity during supply disruptions. Dunn and Leibovici (2021) demonstrate that semiconductor shortages generated particularly severe economic effects because lean inventory practices left firms without buffers to weather supply interruptions, forcing immediate production cuts and price increases across multiple downstream industries dependent on these essential components.

Pricing power: Pricing power amplifies critical input shocks when firms maintaining input access exploit competitive advantages created by competitors' supply constraints. Grossman et al. (2023) demonstrate that firms with continued access to critical inputs during shortages can charge higher prices without losing market share. The study finds that firms may invest in supply chain resilience in order to capture outsized profits when competitors face disruptions, amplifying aggregate inflation following supply shocks as supply-secure firms increase markups.

LABOR SUPPLY SHOCKS

Rigid production: Rigid production functions amplify labor supply shocks when firms cannot substitute toward nonlabor inputs or reallocate workers across sectors and occupations. Bonadio et al. (2021) demonstrate how limited substitutability between labor and other inputs, combined with imperfect labor mobility across occupations, causes labor supply shocks in affected sectors to propagate throughout the economy via input-output linkages because production constraints in labor-constrained sectors cascade to downstream industries dependent on their outputs.

Price and wage rigidity: Price and wage rigidities amplify labor supply shocks through asymmetric adjustment dynamics across production chains. Giovanni et al. (2022) demonstrate how labor supply shocks in one sector raise output prices, which increases costs and reduces labor demand in downstream sectors. Inflationary effects are amplified when downward nominal wage rigidity prevents those downstream sectors from adjusting wages downward to match reduced labor productivity. Bunn et al. (2022) suggest that menu costs create asymmetric price adjustment patterns because firms more readily incur adjustment costs when wages rise than when wages fall, causing upward wage pressures from labor supply shocks to transmit rapidly into prices while downward adjustments are more sluggish.

Inflation expectations: Inflation expectations amplify labor supply shocks by enabling greater pass-through of wage increases into consumer prices. Harding et al. (2023) demonstrate that firms more readily transmit rising wage costs into prices when inflation is already elevated and expectations are rising.

6. Some dynamics dampen and even reverse inflation response to supply shocks

Several mechanisms can dampen, delay, or even reverse the typical positive relationship between supply disruptions and price increases. Those dynamics depend critically on how price-setting behavior, household savings decisions, and market structure interact with the initial supply shock.

Price stickiness can attenuate the inflationary impact of supply shocks but then increase risks to inflation expectations. Luo and Villar (2023) demonstrate that nominal rigidities dampen shock transmission through production chains: When only some firms adjust prices immediately while others maintain existing prices, supply shocks generate smaller initial price increases as they propagate through the economy. This attenuation produces a smaller but more persistent increase in inflation that is harder to attribute to the original supply shock. When price increases are sharp and concentrated, households and businesses can more easily recognize them as temporary responses to specific disruptions. But when inflation emerges gradually and diffusely due to sticky prices, it may be misinterpreted as a more permanent phenomenon, leading to larger increases in inflation expectations than would occur with rapid price adjustment.

An increase in precautionary savings can attenuate or reverse the inflationary effects of negative supply shocks when households face incomplete markets and borrowing constraints. Guerrieri et al. (2022) demonstrate that negative supply shocks in one sector can generate a reduction in demand across multiple sectors when markets are incomplete and the elasticity of substitution between sectors is low. Among workers in the directly affected sector, income losses lead to broad reductions in spending because these workers cannot borrow or insure against temporary income shocks. In addition, when goods and services across sectors are complements rather than substitutes—meaning consumers cannot easily redirect spending from disrupted to undisrupted sectors—the initial supply shock generates a generalized demand contraction. That produces a decline in labor demand even in sectors where productive capacity remains intact. Similarly, Ravn and Sterk (2021) show that when negative supply shocks increase unemployment risk in an economy with incomplete markets and sticky prices, employed workers respond by increasing precautionary savings, which reduces current consumption demand. This creates a feedback loop: Lower demand reduces hiring, which increases unemployment risk, which further strengthens precautionary savings. For both papers, the result is that a supply shock can potentially generate deflationary rather than inflationary outcomes. Monetary policy can lean against that outcome by being more accommodative than if the sole effect of the initial supply shock were to reduce potential output and widen the output gap.

If firms keep prices unchanged during stockouts, the result might be further stockouts but less inflation. Cavallo, Cavallo, and Rigobon (2014) document this pattern empirically in the aftermath of major earthquakes in Chile and Japan. When retailers maintained pre-disaster prices despite severe supply disruptions, goods experiencing stockouts did not see corresponding price increases for months. That price rigidity resulted in prolonged stockouts.

7. Conclusion

This review synthesizes recent (and not so recent) literature on supply shocks to provide researchers and policymakers with a framework for understanding how different types of disruptions can transmit through the economy and increase inflation. The analysis reveals that inflationary outcomes depend as much on the initial shock size as on the economic characteristics that amplify or dampen transmission.

A key insight is that certain structural features of the economy systematically magnify supply disruptions into inflation. When firms cannot easily substitute away from disrupted inputs or suppliers, whether because of technological constraints or relationship-specific investments, localized shocks can cascade through production networks. When production systems operate with minimal inventory buffers or little excess capacity, small disruptions can trigger disproportionate price responses. When prices adjust sluggishly due to contracts, menu costs, or social norms, inflationary pressures can be smaller initially but then more persistent. When firms have market power, they can exploit disruptions to competitors and raise markups. And when inflation expectations become unanchored, particularly following visible price increases in food and energy, behavioral responses can transform temporary supply shocks into self-reinforcing price dynamics.

These characteristics interact in important ways. The literature suggests that supply shocks generate the most severe and persistent inflation when multiple amplification mechanisms operate simultaneously—for instance, when supply chain shocks affect sectors with low inventories and dense, relationship-intensive networks, or when commodity price shocks affect sectors with inflexible production functions and inflation expectations are poorly anchored. This taxonomy endeavors to provide researchers and policymakers with a guide to help them scan the horizon for inflation risks, including what kinds of supply shocks may affect inflation and what characteristics of the economy can amplify their effects.

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Appendix

CLASSIFICATION OF LITERATURE BY SHOCK TYPE, TRANSMISSION CHANNEL, AND AMPLIFICATION MECHANISM

This appendix presents the complete classification of 88 papers reviewed for this study. Each paper is listed once with all identified shock-channel-amplification combinations beneath it.

A GUIDE TO MACROECONOMICS AND CLIMATE CHANGE
Bilal, Adrien, and James H. Stock (2025)
- Natural Disaster Shock --> Production Function --> Degree of Adaptation
- Natural Disaster Shock --> Production Function --> Input-Output Network Dependencies
- Commodity Price Shock --> Production Function --> Substitutability
- Commodity Price Shock --> Production Function --> Input-Output Network Dependencies

CASCADING FAILURES IN PRODUCTION NETWORKS
Baqaee, David Rezza (2018)
- Global Supply Chain Disruption --> Supply Chain --> Input-Output Network Dependencies
- Critical Input Shock --> Supply Chain --> Input-Output Network Dependencies
- Critical Input Shock --> Production Function --> Scarcity and No Substitutability

CLIMATE HAZARDS AND RESILIENCE IN THE GLOBAL CAR INDUSTRY
Castro-Vincenzi, Juanma (2024)
- Natural Disaster Shock --> Production Function --> Degree of Adaptation
- Natural Disaster Shock --> Production Function --> Input-Output Network Dependencies

COMMODITY-PRICE PASS-THROUGH ALONG THE PRICING CHAIN
Jiménez-Rodríguez, Rebeca, and Amalia Morales-Zumaquero (2022)
- Commodity Price Shock --> Production Function --> Substitutability
- Commodity Price Shock --> Production Function --> Input-Output Network Dependencies

CONVEX SUPPLY CURVES
Boehm, Christoph E., and Nitya Pandalai-Nayar (2022)
- Productivity Shock --> Production Function --> Capacity Utilization Convexity
- Productivity Shock --> Production Function --> Input-Output Network Dependencies

COST-PRICE RELATIONSHIPS IN A CONCENTRATED ECONOMY
Bräuning, Falk, José L. Fillat, and Gustavo Joaquim (2022)
- Productivity Shock --> Production Function --> Market-Power

DELAYED INFLATION IN SUPPLY CHAINS: THEORY AND EVIDENCE
Minton, Robert, and Brian Wheaton (2023)
- Commodity Price Shock --> Production Function --> Pass-Through Lags

DEMAND-OR-SUPPLY? PRICE ADJUSTMENT DURING THE COVID-19 PANDEMIC

Balleer, Almut, Sebastian Link, Manuel Menkhoff, and Peter Zorn (2020)

- Pandemic Shock --> Supply Chain --> Limited input substitutability

DID SUPPLY CHAINS DELIVER PANDEMIC-ERA INFLATION?

Levy, Phil (2024)

- Pandemic Shock --> Consumer Spending --> Capacity constraints and inventory adjustment

FIRMING UP PRICE INFLATION

Bunn, Philip, Lena S. Anayi, Nicholas Bloom, Paul Mizen, Gregory Thwaites, and Ivan Yotzov (2022)

- Commodity Price Shock --> Production Function --> Menu costs
- Labor Supply Shock --> Labor Market --> Wage pressure pass-through amplified by menu costs

FISCAL POLICY DURING A PANDEMIC

Faria-e-Castro, Miguel (2021)

- Pandemic Shock --> Consumer Spending --> Borrower default and bank deleveraging

FORECASTING INFLATION USING COMMODITY-PRICE AGGREGATES

Chen, Yu-chin, Stephen J. Turnovsky, and Eric Zivot (2014)

- Commodity Price Shock --> Production Function --> Nominal Rigidities and Exchange Rate Pass-Through

FROM BOTTLENECKS TO INFLATION: IMPACT OF GLOBAL SUPPLY-CHAIN DISRUPTIONS ON INFLATION IN SELECT ASIAN ECONOMIES

Platitas, Reizle Jade C., and Jan Christopher G. Ocampo (2025)

- Global Supply Chain Disruption --> Production Function --> Importance of imported goods in production function

GLOBAL SUPPLY CHAIN DISRUPTIONS: EVOLUTION, IMPACT, OUTLOOK

Igan, Deniz, Phurichai Rungcharoenkitkul, and Koji Takahashi (2022)

- Global Supply Chain Disruption --> Production Function --> Network Fragility
- Global Supply Chain Disruption --> Production Function --> Technological non-substitutability
- Global Supply Chain Disruption --> Production Function --> Inventory swings

GLOBAL SUPPLY CHAIN PRESSURES, INFLATION, AND IMPLICATIONS FOR MONETARY POLICY

Ascari, Guido, Dennis Bonam, and Andra Smadu (2024)

- Global Supply Chain Disruption --> Production Function --> Network propagation with limited substitutability

GLOBAL SUPPLY CHAIN PRESSURES, INTERNATIONAL TRADE, AND INFLATION

Giovanni, Julian di, Şebnem Kalemli-Özcan, Alvaro Silva, and Muhammed A. Yildirim (2022)

- Pandemic Shock --> Consumer Spending --> Lack of substitutability for global resources
- Pandemic Shock --> Labor Market --> Complementarity in production with downward wage rigidity
- Labor Supply Shock --> Labor Market --> Complementarity in production with downward wage rigidity

GLOBAL SUPPLY CHAINS IN THE PANDEMIC

Bonadio, Barthélémy, Zhen Huo, Andrei A. Levchenko, and Nitya Pandalai-Nayar (2021)

- Labor Supply Shock --> Supply Chain --> Limited factor mobility with input complementarity
- Pandemic Shock --> Supply Chain --> Limited factor mobility with input complementarity

GLOBAL SUPPLY CHAINS: THE LOOMING GREAT REALLOCATION

Alfaro, Laura, and Davin Chor (2023)

- Pandemic Shock --> Supply Chain --> Limited short-run substitutability with supplier adjustment frictions
- Import Price Shock --> Supply Chain --> Limited short-run substitutability with supplier adjustment frictions

GLOBAL SUPPLY SIDE DISRUPTIONS AND LONGER DELIVERY TIMES IN THE EURO AREA

Kuehl, Michael, Angela Capolongo, and Vlad Skovorodov (2022)

- Pandemic Shock --> Supply Chain --> Importance of transported goods in production of final goods
- Pandemic Shock --> Labor Market --> Potential for increase in inflation expectations

GLOBAL VALUE CHAINS

Antràs, Pol, and Davin Chor (2022)

- Global Supply Chain Disruption --> Network --> Sequential Complementarity and Roundabout Production Structure
- Global Supply Chain Disruption --> Supply Chain --> Fixed Costs of Importing and Complementarity in Sourcing Decisions

GLOBAL SUPPLY CHAIN DISRUPTIONS AND INFLATION DURING THE COVID-19 PANDEMIC

Santacreu, Ana Maria, and Jesse LaBelle (2022)

- Global Supply Chain Disruption --> Production Function --> Exposure to Foreign Supply issues of critical inputs and concentrated industries
- Global Supply Chain Disruption --> Consumer Spending --> Reliance on disrupted Foreign Suppliers of goods that saw increase in demand
- Pandemic Shock --> Production Function --> Exposure to Foreign Supply issues of critical inputs and concentrated industries
- Pandemic Shock --> Consumer Spending --> Reliance on disrupted Foreign Suppliers of goods that saw increase in demand

HAS THE WILLINGNESS TO WORK FALLEN DURING THE COVID PANDEMIC?

Faberman, R. Jason, Andreas I. Mueller, and Ayşegül Şahin (2022)

- Labor Supply Shock --> Labor Market --> Reservation wage increases concentrated among certain groups

HIGH IMPORT PRICES ALONG THE GLOBAL SUPPLY CHAIN FEED THROUGH TO U.S. DOMESTIC PRICES

Amiti, Mary, Sebastian Heise, and Aidan Wang (2021)

- Import Price Shock --> Production Function --> Importance of costlier imported intermediate goods in production function
- Import Price Shock --> Pricing Power --> Substitutability between domestic and foreign output

HOW DO SUPPLY SHOCKS TO INFLATION GENERALIZE? EVIDENCE FROM THE PANDEMIC ERA IN EUROPE

Acharya, Viral V., Matteo Crosignani, Tim Eisert, and Christian Eufinger (2025)

- Global Supply Chain Disruption --> Production Function --> Firm Pricing Power and Inflation Expectations Interaction

HOW DOES A RISE IN INTERNATIONAL SHIPPING COSTS AFFECT U.S. INFLATION

Herriford, Trenton, Elizabeth M Johnson, Nicholas Sly, and A Lee Smith (2016)

- Import Price Shock --> Production Function --> Delayed Pass-Through with Long Lags

INFLATION AND GDP DYNAMICS IN PRODUCTION NETWORKS: A SUFFICIENT STATISTICS APPROACH

Afrouzi, Hassan, and Saroj Bhattarai (2023)

- Commodity Price Shock --> Production Function --> Input-Output Network Propagation with Heterogeneous Price Stickiness
- Productivity Shock --> Production Function --> Input-Output Network Propagation with Heterogeneous Price Stickiness

INFLATION RESPONSES TO COMMODITY PRICE SHOCKS -- HOW AND WHY DO COUNTRIES DIFFER

Gelos, Gaston, and Yulia Ustyugova (2017)

- Commodity Price Shock --> Production Function --> Increase in inflation expectations

INFLATION STRIKES BACK: THE ROLE OF IMPORT COMPETITION AND THE LABOR MARKET

Amiti, Mary, Sebastian Heise, Fatih Karahan, and Ayşegül Şahin (2024)

- Import Price Shock --> Production Function --> Limited ability to substitute between labor and intermediates; the simultaneous foreign competition shock allows domestic producers to increase prices
- Labor Supply Shock --> Pricing Power --> Markup protection - higher foreign prices allow domestic firms to raise markups without losing market share

INPUT LINKAGES AND THE TRANSMISSION OF SHOCKS: FIRM-LEVEL EVIDENCE FROM THE 2011 TŌHOKU EARTHQUAKE

Boehm, Christoph E., Aaron Flaaen, and Nitya Pandalai-Nayar (2019)

- Natural Disaster Shock --> Production Function --> Extremely limited substitutability between critical inputs and other inputs

INPUT SPECIFICITY AND THE PROPAGATION OF IDIOSYNCRATIC SHOCKS IN PRODUCTION NETWORKS

Barrot, Jean-Noël, and Julien Sauvagnat (2016)

- Natural Disaster Shock --> Supply Chain --> Input specificity prevents firms from replacing disrupted suppliers
- Critical Input Shock --> Supply Chain --> Input specificity prevents firms from replacing disrupted suppliers

INTERNATIONAL INFLATION SPILLOVERS THROUGH INPUT LINKAGES

Auer, Raphael A., Andrei A. Levchenko, and Philip Sauré (2019)

- Import Price Shock --> Network --> Cross-border propagation of cost shocks through production linkages
- Commodity Price Shock --> Network --> Cross-border propagation of cost shocks through production linkages

INTERNATIONAL TRADE FLUCTUATIONS AND MONETARY POLICY

Leibovici, Fernando, and Ana Maria Santacreu (2015)

- Productivity Shock --> Network --> Trade elasticities (low price elasticity, high income elasticity of imports)

MACROECONOMIC FLUCTUATIONS WITH HANK & SAM

Ravn, Morten O, and Vincent Sterk (2021)

- Productivity Shock --> Production Function --> Precautionary savings and price stickiness

MACROECONOMIC IMPLICATIONS OF COVID-19 - CAN NEGATIVE SUPPLY SHOCKS CAUSE DEMAND SHORTAGES?

Guerrieri, Veronica, Guido Lorenzoni, Ludwig Straub, and Iván Werning (2022)

- Pandemic Shock --> Production Function --> Dampened by reduction in consumer spending from incomplete markets and borrowing constraints

MEASURING LABOR SUPPLY AND DEMAND SHOCKS DURING COVID-19

Brinca, Pedro, Joao B. Duarte, and Miguel Faria-e-Castro (2021)

- Labor Supply Shock --> Labor Market --> Sectoral heterogeneity means some sectors experience larger effects

MICRO PROPAGATION AND MACRO AGGREGATION

Baqaee, David, and Elisa Rubbo (2023)

- Productivity Shock --> Production Function --> Complementarity vs substitutability of inputs

MONETARY POLICY IN AN ERA OF GLOBAL SUPPLY CHAINS

Wei, Shang-Jin, and Yinxi Xie (2020)

- Import Price Shock --> Production Function --> Sticky prices in some sectors
- Productivity Shock --> Production Function --> Substitutability

NETWORKS AND THE MACROECONOMY: AN EMPIRICAL EXPLORATION

Acemoglu, Daron, Ufuk Akcigit, and William Kerr (2016)

- Productivity Shock --> Network --> Network propagation
- Critical Input Shock --> Network --> Network propagation

NETWORKS, PHILLIPS CURVES, AND MONETARY POLICY

Rubbo, Elisa (2023)

- Productivity Shock --> Network --> Price stickiness
- Productivity Shock --> Production Function --> Covariance between productivity shocks and price flexibility

OIL PRICES, MONETARY POLICY, AND INFLATION SURGES

Gagliardone, Luca, and Mark Gertler (2024)

- Commodity Price Shock --> Production Function --> Low elasticity of substitution between oil and labor
- Commodity Price Shock --> Labor Market --> Wage rigidity prevents wage adjustment off-setting oil price increase

OPTIMAL MONETARY POLICY WITH INTERNATIONAL TRADE IN INTERMEDIATE INPUTS

Gong, Liutang, Chan Wang, and Heng-fu Zou (2016)

- Import Price Shock --> Production Function --> Heterogeneous price stickiness across production stages

PANDEMIC INFLATION AND NONLINEAR GLOBAL PHILLIPS CURVES

Forbes, Kristin, Joseph Gagnon, and Christopher Collins (2021)

- Pandemic Shock --> Labor Market --> Greater inflation response at low levels of slack

PANDEMIC-ERA INFLATION DRIVERS AND GLOBAL SPILLOVERS

Di Giovanni, Julian, Şebnem Kalemli-Özcan, Alvaro Silva, and Muhammed A. Yıldırım (2023)

- Commodity Price Shock --> Network --> Low elasticity of substitution across factors and inputs
- Pandemic Shock --> Network --> Low elasticity of substitution across factors and inputs

PRICES AND SUPPLY DISRUPTIONS DURING NATURAL DISASTERS

Cavallo, Alberto, Eduardo Cavallo, and Roberto Rigobon (2013)

- Natural Disaster Shock --> Supply Chain --> Depends on price stickiness -- more sticky means less inflation amplification
- Natural Disaster Shock --> Consumer Spending -->Heterogeneity in stockouts leads to hoarding

PROPAGATION OF ECONOMIC SHOCKS THROUGH GLOBAL SUPPLY CHAINS: EVIDENCE FROM HURRICANE SANDY

Kashiwagi, Yuzuka, Yasuyuki Todo, and Petr Matous (2021)

- Natural Disaster Shock --> Network --> Input specificity and Search barriers
- Natural Disaster Shock --> Network --> Network density

PROPAGATION OF FINANCIAL SHOCKS IN AN INPUT-OUTPUT ECONOMY WITH TRADE AND FINANCIAL LINKAGES

Luo, Shaowen (2020)

- Productivity Shock --> Network --> Illiquidity contagion

PROPAGATION OF SHOCKS IN AN INPUT-OUTPUT ECONOMY: EVIDENCE FROM DISAGGREGATED PRICES

Luo, Shaowen, and Daniel Villar (2023)

- Productivity Shock --> Network --> Nominal price rigidities and inefficiencies compounded through production chains

RIGID PRODUCTION NETWORKS

Pellet, Thomas, and Alireza Tahbaz-Salehi (2023)

- Productivity Shock --> Network --> Rigidities in production and informational frictions

RISK, RESILIENCE, AND REBALANCING IN GLOBAL VALUE CHAINS

Lund, Susan, James Manyika, Lola Woetzel, Edward Barriball, Mekala Krishnan, Knut Alicke, Michael Birshan, et al. (2020)

- Natural Disaster Shock --> Supply Chain --> Structural vulnerabilities in lean global supply chains
- Global Supply Chain Disruption --> Supply Chain --> Structural vulnerabilities in lean global supply chains

SEMICONDUCTOR SHORTAGES AND VEHICLE PRODUCTION AND PRICES

Krolikowski, Pawel M., and Kristoph Naggert (2021)

- Critical Input Shock --> Production Function --> Just-in-time systems and global capacity constraints

SHIPPING COSTS AND INFLATION

Carrière-Swallow, Yan, Pragyan Deb, Davide Furceri, Daniel Jiménez, and Jonathan D. Ostry (2023)

- Global Supply Chain Disruption --> Production Function --> Limited route substitutability

SHIPPING PRICES AND IMPORT PRICE INFLATION

Isaacson, Maggie, and Hannah Rubinton (2023)

- Global Supply Chain Disruption --> Production Function --> Inability to substitute to other transportation methods

SOURCES OF SUPPLY CHAIN DISRUPTIONS AND THEIR IMPACT ON EURO AREA MANUFACTURING

De Santis, Roberto A. (2022)

- Pandemic Shock --> Production Function --> Supply bottlenecks (including of critical inputs) created sharp steepening of supply curves

SUPPLY AND DEMAND IN DISAGGREGATED KEYNESIAN ECONOMIES: APPLICATION TO COVID-19 CRISIS

Baqaee, David, and Emmanuel Farhi (2022)

- Productivity Shock --> Network --> Complementarities in production networks and nominal rigidities

SUPPLY BOTTLENECKS: WHERE, WHY, HOW MUCH, AND WHAT NEXT?

Oya Celasun, Niels-Jakob Hansen, Aiko Mineshima, Mariano Spector, and Jing Zhou (2022)

- Global Supply Chain Disruption --> Production Function --> Rigid production function requiring critical inputs
- Labor Supply Shock --> Labor Market --> Rigid production function requiring critical inputs

SUPPLY CHAIN BOTTLENECKS AND INFLATION: THE ROLE OF SEMICONDUCTORS

Dunn, Jason and Fernando Leibovici (2021)

- Critical Input Shock --> Production Function --> Lean inventories, rigid production functions

SUPPLY CHAIN CONSTRAINTS AND INFLATION

Comin, Diego A., Robert C. Johnson, and Callum J. Jones (2023)

- Productivity Shock --> Production Function --> Sharp reduction in capacity acts as endogenous positive markup shock for domestic and imported goods

SUPPLY CHAIN DISRUPTION AND ENERGY SUPPLY SHOCKS

De Santis, Roberto A. (2024)

- Global Supply Chain Disruption --> Production Function --> Negative shock to delivery times creates persistent problems in delivery times, production, inflation, and inflation expectations
- Commodity Price Shock --> Production Function --> Persistent increase in energy prices increases inflation expectations

SUPPLY CHAIN DISRUPTIONS: EVIDENCE FROM THE GREAT EAST JAPAN EARTHQUAKE

Carvalho, Vasco M, Makoto Nirei, Yukiko U Saito, and Alireza Tahbaz-Salehi (2021)

- Natural Disaster Shock --> Production Function --> Limited substitutability of suppliers in short run; relationship-specific investments make switching costly
- Global Supply Chain Disruption --> Production Function --> Limited substitutability of suppliers in short run; relationship-specific investments make switching costly

SUPPLY CHAIN DISRUPTIONS, THE STRUCTURE OF PRODUCTION NETWORKS, AND THE IMPACT OF GLOBALIZATION

Elliott, Matthew, and Matthew O. Jackson (2024)

- Critical Input Shock --> Supply Chain --> Short-run rigidity means no substitution possible; network complexity amplifies expected losses

SUPPLY CHAIN RESILIENCE AND THE EFFECTS OF ECONOMIC SHOCKS

Morales, Nicolas (2025)

- Pandemic Shock --> Network --> Network effects; firms with differentiated inputs face larger amplification due to limited substitutes

SUPPLY CHAIN RESILIENCE: SHOULD POLICY PROMOTE INTERNATIONAL DIVERSIFICATION OR RESHORING?

Grossman, Gene M., Elhanan Helpman, and Hugo Lhuillier (2023)

- Critical Input Shock --> Supply Chain --> Higher markups during shocks from firms that invested in resilient supply chains
- Critical Input Shock --> Pricing Power --> Higher markups during shocks from firms that invested in resilient supply chains

SUPPLY CHAIN SHORTAGES, LARGE FIRMS' MARKET POWER AND INFLATION

Franzoni, Francesco A., Mariassunta Giannetti, and Roberto Tubaldi (2023)

- Global Supply Chain Disruption --> Production Function --> Superstar firms have more resilient supply chains and bargaining power for preferential deliveries; concentrated industries see larger price increases
- Global Supply Chain Disruption --> Pricing Power --> Superstar firms have more resilient supply chains and bargaining power for preferential deliveries; concentrated industries see larger price increases

SUPPLY DRIVERS OF US INFLATION SINCE THE COVID-19 PANDEMIC

Kabaca, Serdar, and Kerem Tuzcuoglu (2023)

- Global Supply Chain Disruption --> Production Function --> All supply shocks create supply bottlenecks as firms endeavor to change input mix
- Commodity Price Shock --> Production Function --> All supply shocks create supply bottlenecks as firms endeavor to change input mix
- Productivity Shock --> Production Function --> All supply shocks create supply bottlenecks as firms endeavor to change input mix
- Labor Supply Shock --> Labor Market --> All supply shocks create supply bottlenecks as firms endeavor to change input mix

SUPPLY NETWORK FORMATION AND FRAGILITY

Elliott, Matthew, Benjamin Golub, and Matthew V. Leduc (2022)

- Global Supply Chain Disruption --> Network --> Small systemic shocks cause discontinuous collapse when network crosses critical reliability threshold

SYSTEMIC RISK IN SUPPLY CHAINS: A VECTOR AUTOREGRESSIVE MEASUREMENT APPROACH

Laschat, Dirk, and Thomas Ehrmann (2021)

- Global Supply Chain Disruption --> Network --> Network connectedness creates systemic risk - vulnerable nodes/hubs transmit shocks across regions and supply chain levels

THE AGGREGATE EFFECTS OF GLOBAL AND LOCAL SUPPLY CHAIN DISRUPTIONS, 2020-2022

Alessandria, George, Shafaat Yar Khan, Armen Khederlarian, Carter Mix, and Kim J. Ruhl (2023)

- Global Supply Chain Disruption --> Supply Chain --> Low initial inventories amplify delay effects; stockouts cascade through input-output linkages

THE CAUSAL EFFECTS OF GLOBAL SUPPLY CHAIN DISRUPTIONS ON MACROECONOMIC OUTCOMES: EVIDENCE AND THEORY

Bai, Xiwen, Jesús Fernández-Villaverde, Yiliang Li, and Francesco Zanetti (2024)

- Global Supply Chain Disruption --> Supply Chain --> Rigid production function among producers means producers have spare capacity even as retailers have shortages

THE COMMODITY-CONSUMER PRICE CONNECTION: FACT OR FABLE?

Blomberg, S Brock, and Ethan S Harris (1995)

- Commodity Price Shock --> Production Function --> Inflation hedging feedback loop
- Commodity Price Shock --> Production Function --> Monetary policy response can amplify if it sees through commodity price shock

THE DOMINANT ROLE OF EXPECTATIONS AND BROAD-BASED SUPPLY SHOCKS IN DRIVING INFLATION

Beaudry, Paul, Chenyu Hou, and Franck Portier (2025)

- Productivity Shock --> Production Function --> Agents overweight synchronized/salient sectoral shocks when forming expectations
- Commodity Price Shock --> Production Function --> Agents overweight synchronized/salient sectoral shocks when forming expectations

THE EXPECTED, PERCEIVED, AND REALIZED INFLATION OF U.S. HOUSEHOLDS BEFORE AND DURING THE COVID-19 PANDEMIC

Coibion, Olivier, Yuriy Gorodnichenko, and Michael Weber (2023)

- Pandemic Shock --> Production Function --> Households overweight prices of frequently purchased/salient goods when forming aggregate inflation expectations, creating feedback from narrow price experiences to economy-wide expectations

THE GLOBAL SUPPLY SIDE OF INFLATIONARY PRESSURES

Akinci, Ozge, Gianluca Benigno, Ruth Cesar Heymann, Julian di Giovanni, Jan J. J. Groen, Lawrence Lin, and Adam I. Noble (2022)

- Global Supply Chain Disruption --> Supply Chain --> Cross-country synchronization of supply disruptions creates correlated inflation pressures globally; supply factors have outsized impact on PPI which then feeds through to goods CPI but not services CPI, creating sectoral divergence
- Global Supply Chain Disruption --> Production Function --> Cross-country synchronization

of supply disruptions creates correlated inflation pressures globally; supply factors have outsized impact on PPI which then feeds through to goods CPI but not services CPI, creating sectoral divergence

- Commodity Price Shock --> Supply Chain --> Cross-country synchronization of supply disruptions creates correlated inflation pressures globally; supply factors have outsized impact on PPI which then feeds through to goods CPI but not services CPI, creating sectoral divergence
- Commodity Price Shock --> Production Function --> Cross-country synchronization of supply disruptions creates correlated inflation pressures globally; supply factors have outsized impact on PPI which then feeds through to goods CPI but not services CPI, creating sectoral divergence

THE IMPACT OF GLOBAL SHIPPING COST SURGES ON US IMPORT PRICE INFLATION

Sheng Shen, Leslie, and Hillary Stein (2024)

- Global Supply Chain Disruption --> Production Function --> Pass-through intensifies during severe cost surges; routes with fewer alternatives experience stronger pass-through as exporters gain pricing power when importers cannot substitute to cheaper routes

THE IMPACTS OF SUPPLY CHAIN DISRUPTIONS ON INFLATION

Gordon, Matthew V., and Todd E. Clark (2023)

- Global Supply Chain Disruption --> Production Function --> Supply chain shocks created constraints on suppliers to meet demand, with effects most pronounced when resurgent demand meets constrained supply capacity

THE MACROECONOMIC EFFECTS OF GLOBAL SUPPLY CHAIN DISRUPTIONS

Finck, David, and Peter Tillmann (2023)

- Global Supply Chain Disruption --> Supply Chain --> Tight network of global sourcing creates cascade effects where small disruptions become sizable macroeconomic shocks

THE MACROECONOMIC IMPACT OF MICROECONOMIC SHOCKS: BEYOND HULTEN'S THEOREM

Baqaee, David Rezza, and Emmanuel Farhi (2019)

- Productivity Shock --> Network --> Nonlinearities magnify negative shocks and attenuate positive shocks when elasticities of substitution is low and with factor reallocation constraints

THE MACROECONOMICS OF SUPPLY CHAIN DISRUPTIONS

Acemoglu, Daron, and Alireza Tahbaz-Salehi (2025)

- Global Supply Chain Disruption --> Supply Chain --> Small shocks that lead to relationship dissolution can mean discontinuous changes in output due to network effects

THE NETWORK STRUCTURE OF INTERNATIONAL TRADE

Chaney, Thomas (2014)

- Global Supply Chain Disruption --> Network --> Network propagation as firms lose their ability to search remotely for new partners; shocks propagate more strongly between geographically proximate markets

TIME AS A TRADE BARRIER

Hummels, David L., and Georg Schaur (2013)

- Import Price Shock --> Production Function --> Delivery delays of intermediate inputs can have outsized effects on production
- Global Supply Chain Disruption --> Production Function --> Delivery delays of intermediate inputs can have outsized effects on production

TRADING FOR DEVELOPMENT IN THE AGE OF GLOBAL VALUE CHAINS

World Bank (2020)

- Natural Disaster Shock --> Supply Chain --> Disruptions cascade through supply chains and input-out linkages because of lack of substitutability of critical inputs
- Natural Disaster Shock --> Supply Chain --> Low inventory holdings
- Productivity Shock --> Network --> Disruptions cascade through supply chains and input-out linkages because rigid production functions can't respond to supply shocks to intermediate goods
- Productivity Shock --> Network --> Low inventory holdings

UNDERSTANDING POST-COVID INFLATION DYNAMICS

Harding, Martín, Jesper Lindé, and Mathias Trabandt (2023)

- Productivity Shock --> Production Function --> Nonlinear Phillips curve
- Labor Supply Shock --> Production Function --> Nonlinear Phillips curve

UNDERSTANDING US INFLATION DURING THE COVID-19 ERA

Ball, Laurence, Daniel Leigh, and Prachi Mishra (2022)

- Pandemic Shock --> Production Function --> Nonlinear Phillips curve
- Pandemic Shock --> Supply Chain --> Nonlinear Phillips curve
- Pandemic Shock --> Labor Market --> Nonlinear Phillips curve
- Pandemic Shock --> Production Function --> Increase inflation expectations
- Pandemic Shock --> Supply Chain --> Increase inflation expectations
- Pandemic Shock --> Labor Market --> Increase inflation expectations

UNINSURED UNEMPLOYMENT RISK AND OPTIMAL MONETARY POLICY IN A ZERO-LIQUIDITY ECONOMY

Challe, Edouard (2020)

- Productivity Shock --> Production Function --> Uninsured unemployment risk generates potential unemployment feedback loop from higher savings; optimal policy must allow inflation to rise more and persist longer to avoid that

WAGE-PRICE SPIRALS

Lorenzoni, Guido, and Iván Werning (2023)

- Critical Input Shock --> Supply Chain --> Stickiness prevents immediate adjustment, producing persistent inflation spiral as wages chase prices

WEATHERING THE STORM: SUPPLY CHAINS AND CLIMATE RISK

Castro-Vincenzi, Juanma, Gaurav Khanna, Nicolas Morales, and Nitya Pandalai-Nayar (2025)

- Natural Disaster Shock --> Supply Chain --> Diversification in supply chains among risk averse firms increases input costs

WHAT CAN STOCKOUTS TELL US ABOUT INFLATION?

Cavallo, Alberto, and Oleksiy Kryvtsov (2023)

- Pandemic Shock --> Supply Chain --> Convex inventory adjustment costs amplify price response
- Global Supply Chain Disruption --> Supply Chain --> Convex inventory adjustment costs amplify price response

WHAT CAUSED THE U.S. PANDEMIC-ERA INFLATION?

Bernanke, Ben, and Olivier Blanchard (2025)

- Pandemic Shock --> Production Function --> Expectations feedback loop
- Pandemic Shock --> Labor Market --> Expectations feedback loop
- Pandemic Shock --> Production Function --> Real wage catch-up
- Pandemic Shock --> Labor Market --> Real wage catch-up

WHAT DRIVES INFLATION? DISENTANGLING SUPPLY AND DEMAND FACTORS

Eickmeier, Sandra, and Boris Hofmann (2025)

- Productivity Shock --> Production Function --> Tightening of monetary policy further reduces supply

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