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Price is What You Pay: An Analysis of Government Pricing Power

Denton Penn Lane
Bard College

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Price is What You Pay: An Analysis of Government Pricing Power

Senior Project Submitted to
The Division of Social Studies
of Bard College

by
Denton Lane

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Introduction:

Marketplaces for goods and services are defined by the existence of prices. In establishing a specific price, the seller and buyer decide to transact and exchange, usually with currency, for something both parties have decided has equal value. This simple transaction offers an understanding that can be extrapolated out into a view of a whole economy. In a market economy, the price is an important determinant for production and consumption. Therefore, prices are an important part of macroeconomic activity and the business cycles within an economy. Government policies seem to change the price level in a market economy such as the United States. Understanding this government pricing power is the aim of this paper. Through theory and fiscal policy actions, government pricing power is explored and theorized.

The role of government in affecting change in the economy is focused on preserving stability and incentivizing growth. These two aims look to provide growing numbers of jobs and stable prices for consumers. In the face of a pressing need to preserve the economic wellbeing of the nation, governments of all types have interjected themselves into the workings of the private sector. This is done with the aim of preserving jobs, financially rescuing companies and uplifting the economy as a whole. This public purpose is something that this paper will refer to many times as the main aim of the government is to stabilize the economy as previously discussed. This focus becomes incredibly clear and necessary in times of crisis.

Covid introduced a once in a century pandemic that disrupted life for the world. Economies experienced shutdowns that resulted in supply shocks, elevated unemployment and a host of macroeconomic trends that proved to be damaging. As a result, prices began to reflect the broad inability for goods to reach consumers in the same way as they did before. Consumers felt

the pain of increasing prices, but more importantly, prices of goods and services became an important concern as the macroeconomy was disrupted. In pursuit of stabilizing the economy (public purpose), many unusual actions such as stimulus checks were viewed as necessary. Yet, even in times not defined by crisis, governments still exercise power over their economies. These powers include pricing power over goods and services. This leads to the two major questions of this paper, how does the government exercise its pricing power and how can this power be used to stabilize the economy. Through establishing the goal of the government as pursuing this public purpose allows this paper to define an assumption in which to view the broader arguments of the work.

Government interaction with the private sector simply cannot be viewed in the same way as the private firms interact with each other. This is due to the fact that in many cases, the government is the greatest single participant in the economy. This can be on both an employment and consumption level and both of these factors have a massive impact on the wellbeing of a given economy. If government consumption is viewed as an increase in demand that is disproportionate to an increase in demand of a single consumer or firm, then the government cannot be viewed equally in its effect on prices in any market it purchases from.

The government sets fiscal and monetary policy as well as purchasing goods and services and employing significant numbers of citizens. No other private entity combines policy with market actions of purchasing goods and services while also providing the same to other market participants. This creates a unique economic entity in the government as a price setter. As this paper will explore, the simple actions of buying, selling and employing are not the only economic actions that the government is able to take. Much of the methods or actions of its

economic activity are undertheorized in connection to the pricing power relationship of the government.

In this project, special attention will be paid to the relationship between government actions and how private businesses price their goods. In understanding this relationship, there will be opportunities to expand on policy measures to affect prices in pursuit of the public purpose. Through outlining applicable theory of business' price setting behaviors as well as the role of government issued currency, the ability of the government to set prices will be shown. In doing so, this paper will focus primarily on the undertheorized relationships between how businesses create market prices for goods and how governments policies and actions create changes in prices. This can be understood as government pricing power, the level of change created by its actions.

This paper takes the view that the effect of fiscal policies on prices is under examined. This paper will describe how government decisions affect prices using the examples of procurement contracts, subsidies/guarantees and price controls. While these are not all of the actions taken by a government that may affect prices in an economy, these are a select group of adjustments that this paper will show that governments can expressly use to affect prices. This paper will look to better understand and analyze the effects of these government actions by turning to various theoretical approaches, including Post Keynesian as well as Modern Money Theory.

This work begins by outlining Post Keynesian pricing theory, to provide a discussion connecting government actions with prevalent firm pricing practices. With this understanding, undertheorized fiscal actions taken by the government can be given a new outline. From here, government economic activity can be targeted as specified by the policy makers to better pursue

the public purpose. This theoretical backdrop becomes the cornerstone to this paper so that government economic actions are well understood and can most benefit the citizens.

The main theories being used in this paper will be focused on two main understandings, how businesses establish prices at which they are willing to sell their goods and the role of government currency. These theories are drawn from authors/economists such as Kalecki, Andrews and Means as well as from Modern Money Theory. Additionally, an extension of Keynes' Multiplier Effect is included to provide an understanding how government actions spread through the economy. From this theoretical basis, this paper will examine how prices are set, compare and contrast Neoclassical theory and establish accurate and applicable policy solutions for government use.

This paper will show that government pricing power is undertheorized and that Post Keynesian theories as well as MMT are useful and able to describe price setting practices. These theories will be used to offer policy options to affect change in prices through three major government actions, Price Controls, Subsidies/Guarantees and Procurement. By offering policy solutions based on this detailed theoretical framework, specific realities of government pricing power are noted. This paper will establish that, while supply and demand determined price relationships affect some markets more than others, finished products prices are best understood through Post Keynesian theories. As this paper will show using these theories, government economic actions in secondary goods markets will have broader price setting effects than just one specific good. While a government purchase of a specific good or service will move that specific price, the scale of government demand and relationship with the currency established with MMT will also reprice all inputs.

Chapter 1: Post Keynesians Price Theories, MMT and Government

Multiplier Effect

In traditional theory, competitive markets exhibit the forces of supply and demand through interactions between producers and consumers. Prices are the value of a good or service denominated in the currency of account which is also referred to as the medium of exchange. According to Monetarism prices are determined by the volume and velocity of money. Currency is also viewed through a supply and demand relationship. Prices are established in relation to how many dollars are chasing a good or service. However, this paper will show that price formation is not such a simple action as traditional theory claims. Instead, prices will be shown to be a combination of business pricing formulas and government price setting powers along with the forces of supply and demand. Since prices are denominated in the currency of account, it is also important to discuss how the public monopoly of currency issuance also affects prices.

Normal Cost Price 1.1:

In discussing business pricing practices, this paper will review Philip Andrews' *Normal Cost Price Theory*. In this theory, Andrews establishes that, to decide on the price of their good or service, firms take the costs of the good and add a markup for profit and other business expenses such as overhead costs (Andrews, 1949). This seems to be a far more realistic way in which companies set prices as sometimes they may not have all of the information necessary to understand the marginal rates of their business. To understand how *Normal Cost Theory* affects firms pricing decisions, this paper will offer a detailed explanation of the theory itself and its current application.

In an important paper published in 1949, Andrews establishes the *Normal Cost Theory*. In outlining the assumptions of this theory, special attention is paid to a differentiation of costs in the view of an individual business. Costs, as seen by Andrews, are generally made up of two main parts, input costs and overhead costs (Andrews, 1949). Of course, costs have differences based on the time horizon in which they are being discussed but for *Normal Cost Theory*, the individual business owner tends to only know short term costs and thus projects that out into the future as their long term costs (Andrews, 1949). This foundational part of the theory will be an important assumption throughout this paper's analysis of how prices are formed.

In continuing with the assumptions of this theory, Andrews discusses the assumed makeup of a firm in *Normal Cost Theory*. He outlines the following important assumptions about the firm and its product market: (Andrews, 1949)

- 1. The firm is a manufacturer**
- 2. The firm operates in a product market rather than a service market**
- 3. The firm only produces one product**

These assumptions are used primarily to create a use case for the theory which can be used to describe different businesses operating in different product markets.

With these assumptions outlined, Andrews moves to a description of price determination. If a single firm creates its cost structure or, as Andrews calls it, "cost rules" by projecting current costs into the future, it is able to determine a price. The firm knows its overhead and input costs and therefore knows its current break even point at a given level of output (Andrews, 1949). This given level of output becomes a further guiding factor in establishing price as a product of costs and projected sales (Andrews, 1949). This projection of sales is a very important part of establishing a price for its product. The firm needs to make an assumption of how much cost it

will incur on a per unit basis to create a certain level of output (Andrews, 1949). In practice, this firm will need to buy the units of inputs and pay the overhead costs (labor hours, rent, etc.) to actually produce a certain amount of the product (Andrews, 1949). Therefore, the firm needs to make a projection of how much the market will be willing to purchase or consume of a good so as not to overproduce and incur costs in excess of revenues.

As discussed, the “cost rules”, sales projections of the specific market have been defined and now the firm must decide on the price at which it will sell its product. This requires the firm to decide on the profit margin of the good. Therefore, the price covers all costs (overhead and inputs) and allows for a certain amount of profit, per unit of good, across the overall volume of sales (Andrews, 1949). This is the final calculation for the overall price of the good as written in the following equation:

- $$\frac{[(\text{sales} \times \text{price}) - (\text{sales} \times \text{costs})]}{\text{units sold or sales}}$$

With the pricing process established, the firm is further confronted with the continuing decisions of producing the product over time. As already stated, the individual firm’s leadership projects its current costs into the future to establish what they think will be long term costs. Andrews makes a point that the theory must take into account two factors, that the decision is made by a human and that the projections have no basis other than current realities (Andrews, 1949). One can therefore infer that prices will change in unknowable ways as no human can predict the future. With this in mind, the theory shifts to how markets with multiple producers operate in relation to the price of the good.

In his theory, Andrews states that the market participants share the same assumptions as the theory and therefore each other. With this common basis of both “cost rules” and sales projection, the market begins to shift in terms of price and thus market share (Andrews, 1949).

As firms begin moving the product to market, they are confronted with the reality of competition. As firms may have different costs and thus the ability to adjust prices lower than competitors causing certain firms to begin to accumulate market share over time (Andrews, 1949). This comes with the assumption of product homogeneity and consumer indifference in terms of brand although Andrews does admit that this is not the case in practice (Andrews, 1949). Because of this, the theory may be viewed differently from the perspective of a new product market versus an established one.

When a new market opens, consumers compare prices, and maximize their purchasing power. Over time this creates market share concentration within a few firms who can maintain profit margins based on comparatively lower costs to their counterparts (Andrews, 1949). These select firms have established the equilibrium price of a good according to Andrews (Andrews, 1949). The price reflects the willingness of the market to consume the amount produced at that price, the ability for producers to cover their costs and the ability to add a markup for profit (Andrews, 1949). With the market price now defined, the theory begins to look towards a longer term reality which is more applicable to product markets that are established.

As market concentration takes place, time passes and most importantly costs change, the price will undoubtedly change as well. With this comes the opportunity for the remaining firms to raise the price to expand profit margins. According to Andrews' theory, this increase in profit margin is not to the long term benefit of the producer firms. Overtime, "excessive" profit margins will entice new entrants into the market as producers of the product (Andrews, 1949). This common business practice is well accounted for in traditional theory as businesses are profit seeking and companies will be founded in high profit industries to pursue those profits. Over time this lowers the price to a level at which new firms are less enticed to enter while there is still

a margin for profit. Andrews' theory however, offers an alternate explanation for why firms will not pursue larger short term profits at the expense of long term, stable profits.

In this theory, firms set their prices with the express desire to allow themselves profit and market share without giving an opening to other or new firms to enter the market (Andrews, 1949). This means they are not maximizing profit as they could be in the short term by raising prices (Andrews, 1949). With this lower price level, new firms would not be financially able to support the entry costs to compete in the market (Andrews, 1949). Andrews also said that production specialization built over time would provide an additional barrier to entry as this helps with lowering costs (Andrews, 1949). With this in mind, a new firm must have a way to significantly cut costs and create a comparable product to be sold at a lower price to take market share. This may be counteracted by the larger, established firms by lowering prices to suffocate the new firm as they may have better balance sheets and can sustain short term losses to keep market share for the long term (Andrews, 1949). This understanding of business competition is important in understanding how pricing power is established and that incumbents have an incentive to not raise prices to excessive levels.

Andrews allows for certain exceptions to *Normal Cost Theory*. One of which being that firms entering a market may not only be new, small firms but rather larger firms with existing capital and labor (Andrews, 1949). This would mean the incumbents would need to have prices low enough to prevent even companies with lesser production startup costs from entering the market (Andrews, 1949). Additionally, this may not even be enough to stop other larger firms from entering, admits Andrews, as some business leadership may simply desire expansion (Andrews, 1949). Another exception is that of product markets with patent protections in place. If patents are present, prices may be raised to create large profit margins but then the firm is still

faced with problems. The first, patents are usually set for a certain period of time and upon expiration, they may face immense competition and lose their market share (Andrews, 1949). Second, they may even raise the price so high as to entice firms to commit patent infringement with the knowledge of an eventual lawsuit (Andrews, 1949). All of these exceptions have shown examples in modern product markets.

Andrews theory of *Normal Cost Theory* provides a useful framework to understand how businesses price their goods. The understanding that the action of producing a good to be sold at a price based on the costing formula as described by Andrews, is an important piece of information for understanding government pricing power. Through subsidies and guarantees, procurement contracts as well as price controls, the ways that businesses establish prices is undoubtedly affected by the government working with the private sector. The major use of Andrews' *Normal Cost Theory* is the outline it establishes for how the private sector establishes prices and as will be explored later, how certain fiscal actions interact with this theory, adjusting prices.

Markup Price 1.2:

To continue this paper's analysis of business pricing practices, an analysis of Michal Kalecki's *Markup Price Theory* is included. He describes this important business pricing theory in his 1954 work where he focuses on important product market distinctions (Kalecki, 1954). His theory offers important insight into how prices are more or less influenced by pressures of supply and demand (Kalecki, 1954). This distinction is important to include in understanding government pricing power in specific markets. This theory of *Markup Prices* will serve as an additional outline of business pricing practices that will help in further understanding government pricing power.

Kalecki begins his discussion of business pricing practices by making an important distinction between prices. He writes that there are two different types of prices, at least in the short term. The first of the two is *Demand-Determined* prices in a market (Kalecki, 1954). These prices are usually raw goods in the forms of commodities which have limited supply in the short term. Commodities such as crops or metals cannot increase supply fast enough to satisfy short term increases in market demands (Kalecki, 1954). On the other hand, if demand falls, the already produced goods are now being chased by fewer dollars and the price can fall quickly. Crops will rot and metals may rust so therefore selling and consuming the goods becomes a priority and sellers will take lower and lower prices (Kalecki, 1954). However, while he states the importance of these prices, Kalecki focuses his *Markup Price Theory* on a second type of goods/prices.

This second type of priced goods is that of *Cost-Determined* Prices (Kalecki, 1954). As economies develop and move away from producing commodity goods and instead produce finished/secondary goods such as cars or computers. While these goods may allow for higher profits, firms are still beholden to their cost structure composed of more and more inputs. As it is understood by Kalecki, the relationship between supply and demand for these goods is different from that of commodities. As demand changes, the plant and equipment needed to produce the goods can simply be used to a certain extent to meet the level of demand. This is not the case for commodity goods. Therefore, a different theory which analyzes cost structures and market share would be much more accurate in understanding business pricing practices for *Cost-Determined* Prices.

In establishing this theory of pricing goods that are *Cost-Determined*, Kalecki's *Markup Price Theory* is given as a formula. This formula is as follows: (Kalecki, 1954)

- $p = mu + np'$

This formula accounts for the following variables as important parts of the pricing equation for a firm. The end price of a product sold by the firm is the product of the equation which is represented as the p . The unit cost or unit prime cost, is represented by the u . The weighted average of all prices in a product market is represented by the p' . The final pieces of the formula are the positive coefficients m and n which represent the degree of monopoly a firm possesses in its product market (Kalecki, 1954).

In examining the details of Kalecki's theory, special attention needs to be paid to the coefficients m and n which represent the degree of monopoly. Monopolies exist and where they exist, they fix prices at levels that are inefficient. However, what is further said in Kalecki's theory is that there is not a binary relationship between whether a market is monopolized or not. Instead, he describes that, while there may be some perception of competition between companies in a marketplace, price is not a direct indicator (Kalecki, 1954). Instead, the inclusion of the degree of monopoly coefficients shows the difference between markets and how some firms have a degree of either one or zero indicating a perfect monopoly or perfect competition.

As market share changes between firms, their ability to have a large influence on the overall market price is accounted for in the equation. In understanding the equation as a price for a single firm, it is clear that the degree of monopoly of one firm can be larger or smaller than another firm. Additionally, the use of a weighted average price also shows that the market share being distributed unequally between firms producing a product means that even though the equation sets the price for one firm, the prices of firms with higher degrees of monopoly and

market share make the price move more significantly (Kalecki, 1954). Kalecki describes this as “Price Fixing”, where a market leader sets price and due to its large market share, prices are adjusted accordingly by other firms (Kalecki, 1954). This is an important understanding of how businesses set prices in Kalecki’s theory.

In the case of markets with a “leader”, prices are not simply established by a simultaneous use of the formula. Instead, the timing of pricing shifts becomes very important for the market price if the change comes from the “leader” (Kalecki, 1954). As previously discussed, the price movement of a firm with high market share and thus larger monopoly coefficients, has a distinct impact over the market price of the goods. Therefore, a nuance of price moving “leadership” as a measure of markets with imperfect monopoly is an important observation to be made about a market.

As an important facet of the *Markup Price Theory*, Kalecki highlights another important business practice which the average American sees everyday, advertising. In gathering market share, firms understand the need to differentiate themselves from the competition, even if the product being sold is relatively the same. In this way, advertising can increase the degree of monopoly through its creation of a distinct brand and a desire for consumers to consume a particular firm’s goods (Kalecki, 1954). This is an important reality in consumer behavior that should be accounted for in understanding how prices are set and can increase the degree of monopoly within a market.

With the establishment of the *Markup Price Theory*, Kalecki offers an important theoretical lens through which this paper will examine product markets. In creating a pricing formula that can be used to view secondary good prices, Kalecki creates an important relationship between market share, degrees of monopoly and the final. This is important in the

pursuit of the stated goal of the paper as the government's actions will be shown to affect markets differently depending on the degrees of monopoly. If a market has producers with a high degree of monopoly, purchasing from those firms will have strong effects on the market price. Conversely, if the market is filled with firms with a low degree of monopoly, the government purchasing will not affect the price as drastically. This distinction is important in outlining where government pricing power comes into effect depending on the dynamics of the product market.

Administered Price 1.3:

For a significant portion of American history, big business has dominated product markets. The idea of the American corporation that employs large amounts of people and creates massive industry concentration is evident for all to see. However, this section will show that the nature of the modern American corporation has run counter to traditional theory which attempted to explain its actions. If one were to look solely at the value created and the deflationary pressures created by these mass scale businesses, it would seem that these firms are the final version of capitalism. Prices could be lowered to benefit consumers as costs become lower and products can be standardized.

In reality, pricing practices of large corporations operate in a way that this paper has shown is more complicated than a simple supply and demand relationship. Gardiner Means outlined the ways in which corporations truly operate almost one hundred years ago with his theory of *Administered Prices*. This theory on prices of goods produced by large corporations is important to outline in the aim of defining the nature of market prices in the United States. This theory will be further used to outline how government pricing power affects markets that have *Administered Prices*.

Gardiner Means began his outline of the *Administered Price Theory* with some important facts. As Means describes, the *Administered Price* “is set by administrative action and held constant for a period of time.” (Means, 1935). This distinction is one of great importance to his theory and to the overall interpretation of prices in markets with this type of price. Where there is a large corporation with significant market share, Means finds that prices are set and held for longer periods of time which is counter to traditional theory (Means, 1935). In other markets, buyers and sellers operate independently and their acceptance of a price for exchange of a good or service sets the price level (Means, 1935). Means clearly describes two different types of markets and his theory works to describe only those with *Administered Prices*. This is an important theory to use in the overall aim of this paper to define pricing mechanisms in American markets and the presence of government pricing power.

Administered Price is an example of a business practice that causes market failures (Means, 1935). He defined *Administered Prices* as those not directly affected by market forces of supply and demand and instead were set for extended periods of time by the corporation (Means, 1935). This phenomena, he examined, was found to be present in industries with larger market concentration. These corporations tended to be large employers and set prices into the future. This allowed them to make business decisions with more information and to be able to project costs and revenues more effectively (Means, 1935). However, this does not mean these corporations have market power and in fact, some of these markets were highly competitive but with only a few participants (Means, 1935). This is an important understanding drawn from Means theory that will be used to pursue the goal of this paper

In examining the labor dynamics in markets with *Administered Prices*, Means made important statements about the results of demand changes. Should demand increase at the

Administered Price, the business could either raise price, raise output or a combination of both (Means, 1935). Should they raise output there is increased demand for labor and the economy at large benefits. If there is less demand at the given price, the *Administered Price* level would be held constant and output cut as a result of lessening demand (Means, 1935). Since labor can be fired, the corporations could move forward with lower costs and still produce output at the *Administered Price* (Means, 1935). As Means noted in his paper, this would tend to accentuate market cycles and any government looking to operate counter cyclical stabilization policies would need to be aware of these *Administered Price* markets.

If a concentrated market with *Administered Prices* is experiencing changes in demand, government intervention can be used to adjust employment. In times of increased demand, the corporations can add labor and invest in further capacity through new plant and equipment. The government may contribute to the increase in demand as it looks to consume more of the goods being produced at the *Administered Price*. The negative change in demand would be as a result of economic recession. In this case, unemployment would be rising and incomes falling exacerbating the initial fall in demand. If the business simply cuts output, lays off workers and continues with the *Administered Price*, the recession could worsen (Means, 1935). Therefore, the government has an option to help the economy recover. If the government purchases what it needs to make up the difference in demand, the same level of employment is kept.

While the government has other tools in that scenario of recession, *Administered Prices* are unique in that consumers are used to prices remaining somewhat constant. In looking through American history, price controls from the OPA were a unique example of possible opportunities to institute price controls for the betterment of the population. It stands to reason that in an industry where prices remain relatively flat over long periods of time, consumers would not

necessarily feel a significant difference in the change in price aside from possible initial adjustment. In this way previous exercising of government power in times of crisis (Second World War) could prove more applicable in certain markets with *Administered Prices*. As was previously mentioned, a lack of price volatility in certain markets with *Administered Prices* would lend itself to the idea that consumers would be unbothered by the introduction of price controls.

Since significant industries in the United States have these entrenched firms with large market share, it is important to include Means' theory in this analysis. While Means wrote of this theory in the early-mid twentieth century, the argument for using his theory to analyze current market price dynamics has strengthened. According to a paper published in 201, "over the last two decades the Herfindahl–Hirschman index (HHI) has systematically increased in more than 75% of US industries, and the average increase in concentration levels has reached 90%." (Grullon, Larkin and Michaely, 2019) With this important piece of data, it becomes apparent the increased need to understand the pricing mechanism of product markets that have now moved towards this level of concentration and *Administered Prices*.

The theory of *Administered Prices* is important in understanding modern secondary goods markets. Means accurately describes a private sector in the United States where firms price their goods at a certain price for a long period of time in many industries (Means, 1935). In addition, instead of lowering or raising prices to match demand, firms will tend to add or layoff labor as needed (Means, 1935). These characteristics are important in understanding how government interaction with firms would affect those prices. Government purchasing of goods and services at the *Administered Price* will have an effect on the price only in the case that there are changes in the cost formulas. Should the private firm only need to employ more or less

labor to meet demand levels, then the price can be held constant. However, if the other inputs to production can not be purchased at a reasonably similar price as before, the *Administered Price* will have to change. As will be described in the section on procurement contracts, this paper offers an example of this possibility. In normal circumstances however, government purchasing of *Administered Priced* goods should, in theory, only affect the level of employment at the firm/s involved in production.

Modern Money Theory 1.4:

Modern Money Theory (MMT) helps establish the connection between the nature of money and prices. This theory details the connection between price and production that is unaccounted for in Neoclassical theory. MMT highlights the role of the government as the public monopoly responsible for issuing and spending the currency, ultimately affecting prices. Prices therefore are viewed as the transacting of participants for goods and services as defined by a shared unit of nominal value. The currency is not only a transaction vector but, as this paper will show, a defining factor in the price of the good or service. In Neoclassical theory, money itself is neutral, simply provides the medium of exchange to provide accurate transference of value the transacting for goods and services. MMT, views production through the understanding of future monetary returns. This means that firms operate in pursuit of earning the currency or profit. Therefore, the role of the government with its public monopoly over the currency has a significant role in establishing currency value and thus prices.

This paper will discuss the ability of the government to control the strength or purchasing power of the currency through policy. In this examination, MMT will be used to outline how the sovereign currency of a nation is being used to affect prices. The government does this even without acknowledging the implications and existence of the public currency monopoly. This

chapter will work to offer a theoretical explanation of these powers by outlining the nature of government money.

Wray(2011) offers a framework to view and analyze modern money. In doing so, he relies on the Chartalist theory of money (Wray, 2011). Money is defined as a creature of the state as a way in which to create and redeem liability (Wray, 2011). The tax liability, sets out a relationship between taxpayer and government. Wray defines the relationship between currency and taxes as an understanding of currencies in general. In creating a tax liability for its citizens, the government is now presented with the opportunity to determine acceptable form of payment to satisfy tax obligations. Therefore by imposing the tax liability, establishing how it must be paid and finally creating that same currency that the taxes must be paid in, the government establishes value for all goods and services denominated in the currency.

A government's imposition of taxes creates debt or liability for the citizen and credit for the government(Wray, 2011). This is not, however, the full extent of the relationship as for the imposition of taxes denominated in a currency is to be successful, the government must first spend, which introduces the currency into circulation(Wray, 2011). Thus it can be seen that the currency is a debt instrument originated by the government as payment for goods and services and it comes with a promise of redemption in the form of satisfying tax liabilities(Wray, 2011). What is more important to the goal of this paper is that when a government creates the currency to spend on goods and services, it establishes value for those goods and services, denominated in the currency which is demanded to satisfy tax obligations (Wray, 2011). Therefore, Wray establishes an important understanding of the role of money, in that it is created to buy goods and services and destroyed in the action of paying taxes.

This is important to understand money in its role in MMT and how this paper will outline its usage as part of government price setting power. As Wray explained in his work, “My running hypothesis is that the monetary system, itself, was invented to mobilize resources to serve what the government perceived to be the public purpose.” (Wray, 2011). Throughout this paper, this public purpose has been established as a focus of government action. As already discussed, money is used by the government to purchase goods and services and then taxed out of the system/economy and destroyed (Wray, 2011). In his paper, Wray writes “Since government is the only issuer of currency, like any monopoly government can set the terms on which it is willing to supply it. If you have something to sell which the government would like to have—an hour of labor, a bomb, a vote—government offers a price that you can accept or refuse.” (Wray, 2011). This quotation is included to highlight how the currency is put to use by the government in pursuit of purchases of goods and services. Another economist wrote, “Accordingly, this tax obligation creates a continuous need for dollars by the private sector. People and firms obtain the needed dollars primarily as payment for the sale of real goods and services to the government” (Mosler, 1997-1998). What is established is that money is created by the government to obtain resources in pursuit of the public purpose and the tax liability establishes the demand for the currency. This forces the private sector to transact with the government in exchange for the currency and at whatever rate the government decides.

An example of this relationship is given in examining the introduction of European currency to African economies as a result of colonization. In her paper, Tcherneva uses this example to outline the role of government money in economic activity (Tcherneva, 2002). Imposing taxes on African colonies created a debtor/creditor relationship for the subjects of the colonies (Tcherneva, 2002). Therefore, the currency was immediately valuable and its value was

directly connected to both taxes and colonizer consumption(exogenous injection of currency) (Tcherneva, 2002). The colonial example presented as an observation of the nature and creation of government money as defined by MMT.

In comparison, Neoclassical theory views money as an efficient means of exchange and taxes as a means of revenue for the government. If taxes are viewed as a revenue stream for the government, then budget hawks will desperately cut programs or raise taxes to make sure they are not spending money they think they don't have. This has been a main argument in government for centuries as politicians attempt to justify their actions. MMT instead describes the creation-timeline of money that allows for governments to view their expenditures and taxes differently than traditional theory. This similarly contributes to the previously described relationships between how much the government spends versus taxes and the resulting imbalance described as public debt. This will be the next subject of discussion in understanding government money and how it affects prices.

In consuming goods and services, the government introduces currency which the private sector needs for taxes. In addition to this need to satisfy tax requirements, there is also a desire on the part of the private sector to save and accumulate wealth which will be discussed further in this chapter. As the government is the monopoly issuer of the currency, the purchasing power or value of the currency is under the direct influence of government policy. Mosler and Silipo(2016) describe this relationship: “The first is the “own rate,” which is how their product exchanges for itself. With a currency this is the interest rate, and the ECB, for example, is the price setter of the policy interest rate for the euro. The second price set by monopolists is how their product exchanges for other goods and services in the economy, and this is done by setting the terms of exchange for at least one traded good or service.” (Mosler and Silipo, 2016). As is

clear, the government set prices for their goods and services, denominated in the currency, as they see fit. The government also sets the price of the currency in the form of the interest rate and therefore the supply of currency through monetary policy.

This is a well understood operation of government with much literature on the role of the Federal Reserve in overseeing monetary policy. In a paper on monetary policy, Nersisyan and Wray(2016) wrote, “Announcing an interest rate target and utilising the means to achieve it (bond sales and purchases) fall within the realm of monetary policy” (Nersisyan and Wray, 2016). They go on to establish that the interest rate plays a role in the creation of debt and thus the introduction of additional currency into the economy (Nersisyan and Wray, 2016). While it is important, monetary policy is well understood and therefore not much time will be spent to further elaborate on this arm of government policy in this paper.

Now, there is of course “deficit spending” where the government spends more than it receives in taxes for a given period. Therefore, the government incurs debt which is balanced by a private sector surplus or increase in net worth. This understanding is an important principle of MMT as the government has the ability to spend indefinitely as the ability to create currency is only constrained through political means. This is discussed by Mitchell and Mosler(2006). “we recognise that governments do impose constraints on themselves, such as ‘no overdraft rules’ and ‘debt ceilings’ for the treasury and central bank. Again, these are self imposed and reversible by the government, and not inherent in the monetary system.” (Mitchell and Mosler, 2006). A government would not be able to tax its citizens and private sector without first spending, not the other way around. Therefore, the understanding that the government must ‘balance the budget’ would mean no private increase in wealth and to ‘reduce the debt’ would simply mean the private sector would suffer a deficit.

Politicians become unpopular by raising taxes and the trade off between raising taxes in the view of raising government revenue becomes tenuous. With large government deficits being common, it seems that politically, the nature of money may already be known or at least misunderstood in conventional wisdom compared to Neoclassical theory. Popularity can be found in increasing programs that benefit the voting population. Those programs cost money that must in turn be created in excess of the amount that taxes would destroy. Therefore, a cornerstone of Modern Money Theory may be seen as already well understood.

In modern economies, the banking system is responsible for moving and keeping track of most of the money in circulation. Banks are additionally able to create currency through credit creation or loans. Through the creation of debt, banks increase the amount of currency in circulation past the amount created by government consumption. The government allows for this as a means to increase the money supply but also as the banking system creates debt as a means of growing economic value (Tcherneva, 2002). Therefore, the government outsources some of its currency issuing power to the banking system to increase economic activity and growth.

This creation of currency also exhibits the same relationship with the government as the deposits created through government consumption. These deposits are denominated in government currency and therefore are redeemable against tax liabilities. In the same paper that offered the African colonial example, Tcherneva writes, “In sum, the State purchases goods and services by paying with its own currency. Thus, the government has provided for the creation of deposits. Any tax receipt results in depletion of reserves.” (Tcherneva, 2002). The government then lets the banking system continue making loans in the currency as the clearing of payments of banks is done in that currency through the Federal Reserve accounts. Similarly, the government requires that individuals pay their tax liabilities using the currency issued by the

government which will be removed from their accounts via the banking system (Tcherneva, 2002). Here we see the role of the banking system in currency creation and economic activity for both the private sector and the government.

As previously stated, there is also a desire to save currency that creates additional demand. This is demand in excess of the currency needed to satisfy tax requirements. In this sense, savings implies government deficits as explained in Mosler and Silipo's (2016) paper. "When the public deficit is too small to accommodate the private sector's saving desires, market forces—perceived shortages of income required to be able to meet savings desires—depress spending and employment, which reduces tax revenues and increases state transfer payments, thereby increasing the public-sector deficit. These market forces continue to the point where the public-sector debt is, by identity, equal to desired net savings of euro-denominated financial assets." (Mosler and Silipo, 2016). This view of government debt is important for the MMT view of modern economies, currency and debt.

In examining the Modern Money Theory view of money, this paper has established important facts about government money. As the government looks to pursue the public purpose, this understanding of government money is important for a broader understanding of government pricing power. If the government taxes are equal to its consumption and the banking system is not allowed to create loans and deposits, the money supply is zero at the end of the given period. However, the banking system is allowed to create loans and deposits and the government has been consuming far more than it has been taxing. Additionally there is a significant desire to save by the private sector therefore government/public debt is almost universal in modern economies. Therefore we see large government deficits and a large corresponding surplus for the private sector. In this sense the benefits of a MMT view of government money is large private

sector surpluses. Government debt is viewed as a balancing entry on an aggregate economic balance sheet. In this way, the value of government money and spending is, as Wray described in his paper, to pursue the public purpose (Wray, 2011). Large government deficits have corresponded with large increases in private sector wealth.

In establishing the value of the currency, the government is actively involved in pricing all other goods and services. Yes, there may be volatility in certain markets that show themselves to be deviations from the norm. This could be as a result of unforeseen demand or supply shocks rather than a change in the value of the currency. However, this deviation does not take away from broad government pricing power which will be further discussed throughout the paper. As the current examination of MMT has described, creation and use of currency and the implication of tax liability means a government values all goods and services against its monopoly good, the currency. Mosler and Silipo(2016) wrote, “In a market economy a buffer stock policy is used to set one price, with all other prices subsequently reflecting relative value with regard to that set price. This was the basis for the gold standard, for example, with the price of gold set by the government and subsequently all other prices reflected values relative to gold.” (Mosler and Silipo, 2016). In this paper, they define a view of fiat currency as buffer stock administered by the monopoly issuer, the government. This is in line with the view of government monopoly control and issuance of the currency sets all prices in comparison

It is clear through this examination of MMT that instead of the government going out and purchasing goods and services at market prices, the policy actions of the government ultimately establish the prices based on the public monopoly of the currency. Controlling of the value of the currency through monetary and fiscal means is ultimately the guiding principle for the private sector's actions. As discussed, the demand for currency to satisfy taxes and desired savings gives

the private sector reason to produce and sell to the government and other private entities. The existence of currency in excess of tax liabilities creates markets where goods and services are bought and sold using the national currency as well as savings. Therefore, the value of the currency holds importance even if a private citizen is not selling to the government as the tax liability for them still exists as a result of them living within the nation's borders.

With this understanding, the ability of the government to spend is only limited by the political nature of the country or the possible negative effects of increasing currency in circulation. If the government outspends the amount of currency demanded and in essence bids up prices, they devalue the currency. Additionally, this paper has described the fact that limits on government debt in some countries are a political reality instead of a byproduct of the monetary system (Mitchell and Mosler, 2006). In the same paper, Mitchell and Mosler(2006) establish the act of spending by the government as clearly purposeful but not just to purchase goods and services. They write, "The difference is a shift from what can be categorized as 'spending on a quantity rule' to 'spending on a price rule'. For example, under current policy, the government generally budgets a quantity of dollars to be spent at prevailing market prices." (Mitchell and Mosler, 2006). This quote is used to define an important part of the MMT view of government spending.

In breaking down the actions of the government in the economy, this change in viewpoint is a major pillar for MMT. Instead of viewing government spending as constrained by tax revenues and government debt as an overall negative, the change of viewpoint of the whole system is an important change in economic theory. It can be seen now that money, as a monopolized instrument of the state and government debt as integral in creating private sector savings and surpluses, is not a simple unit of value used to transact in a modern capitalist

economy. Instead, a government can view its expenditure as pursuing not only direct physical needs (goods and services necessary in the running of the nation) but also in an active price setting view (Mitchell and Mosler, 2006). In purchasing a good or service using its currency, a government denotes the currency's value.

As the monopoly issuer of the currency, this paper has shown that government expenditures can be targeted to affect price levels in the desired manner. Through an MMT analysis of government policies and currency issuance, this paper will look to build on this analysis of pricing power throughout the paper. Depending on the product market, as established in the business pricing theories previously analyzed, government expenditures will change price levels in differing amounts. Government consumption increases money supply by an introduction of currency as well as defines the amount of currency the government is willing to pay the private sector for a good or service. It will be further examined in this paper, using the Post Keynesian pricing theories previously discussed, how this price then affects private sector transactions and therefore overall price levels. As the monopoly issuer of currency, the government can therefore decide on the value of the currency and thus the price of all goods and services, showing pricing power. However, if the government is consuming with the express goal of affecting price changes, it is important that this MMT view of money be understood to understand this mechanism of pricing.

Keynes Multiplier Effect 1.5:

An important theory describing the economic relationship between the public and private sectors is Keynes' Multiplier Effect Theory (1936). He describes this theory in his seminal work published in 1936 that drastically changed the field of economic theory (Keynes, 1936). In understanding Keynes' theory of how governments affect change on the whole economy, this

paper will look to this theory for similar measures of government pricing powers. In the case of the theory of the Multiplier Effect, Keynes outlines the way in which government activity multiplies outwards through the private sector (Keynes, 1936). With the aim of understanding how governments act on and understand their pricing power, the Multiplier Effect is an important theory to factor in. Due to the enormity of the government spending capacity, understanding the incremental reaction of the private sector would undoubtedly be of interest to an examination of government pricing powers.

In outlining his theory, Keynes wrote a detailed explanation of a primary determinant of the Multiplier Effect. This guiding factor is called the Marginal Propensity to Consume and is understood as an important part of modern economic theory (Keynes, 1936). The Marginal Propensity to Consume as described by Keynes is the amount of an additional unit of wages that a worker would be willing to spend (Keynes, 1936). In the case of a worker in the United States, if their wage is raised by an additional dollar, the Marginal Propensity to Consume would thus be the percentage/amount of that dollar they would then spend. In outlining the formula of this theory, Keynes offers the following formula (Keynes, 1936):

MPC (Marginal Propensity to Consume) = dC_w/dY_w

- **dC_w** is the marginal increase in consumption
- **dY_w** is the marginal increase in wages
- **w** is used to denote wage units

By outlining this equation, Keynes gave his theory of Marginal Propensity to Consume a mathematical formula that could be used when examining consumer behavior.

In viewing the Marginal Propensity to Consume as a simple rule to guide consumption, the Multiplier Effect is defined as a relationship between public and private sector spending.

Keynes notes that, “This quantity is of considerable importance, because it tells us how the next increment of output will have to be divided between consumption and investment. For $\Delta Y_w = \Delta C_w + \Delta I_w$, where C_w and I_w are the increments of consumption and investment; so that we can write $\Delta Y_w = k\Delta I_w$, where $1 - 1/k$ is equal to the marginal propensity to consume.” (Keynes, 1936) He establishes k as the “Investment Multiplier” (Keynes, 1936). In understanding wage growth as a direct result of investment, Keynes also noted that the wage itself was equal to the “Marginal Product of Labor” (Keynes, 1936). This leads to the understanding that investment improves the Marginal Product of Labor so that the wage rises (Keynes, 1936). This in turn can be viewed through the lens of the Marginal Propensity to Consume as a change in the overall consumption of the workers.

There is a continuing effect felt throughout the entire economy as a result of this growth. This is the important fact of the Multiplier Effect Theory. Keynes writes, “It follows, therefore, that, if the consumption psychology of the community is such that they will choose to consume, e.g. nine-tenths of an increment of income, then the multiplier k is 10; and the total employment caused by (e.g.) increased public works will be ten times the primary employment provided by the public works themselves, assuming no reduction of investment in other directions.” (Keynes, 1936). This quotation is included to outline the importance of the way in which the initial increase in spending spreads through the economy. This will be highlighted later in this section to connect the theory with government pricing power.

In addition to the outlining of the formula and effects of the Multiplier Effect Theory, there are also differences in how the theory affects different groups in the economy. As Keynes described this, “For a poor community will be prone to consume by far the greater part of its output” whereas, “Not only is the marginal propensity to consume weaker in a wealthy

community, but, owing to its accumulation of capital being already larger, the opportunities for further investment are less attractive unless the rate of interest falls at a sufficiently rapid rate” (Keynes, 1936). Due to the relationship between a person’s income and the cost of living, the rich/poor divide is seen to play a role in the application of the Marginal Propensity to Consume. Since the poorer members of society are already spending more of their incomes in comparison to the rich, increasing their income will allow them to consume a greater amount of goods and services as a percentage of their overall income (Keynes, 1936). In the case of the rich, they already may be consuming what they would like to and in many cases, make enough money to save on top of that. Therefore, the Marginal Propensity to Consume is significantly less for the wealthy than that of the poorer members of society (Keynes, 1936). This is included as a reminder of how government spending may affect the incomes of different groups and thus, the Multiplier Effect would be different across those groups.

While this relationship between income and consumption is important to Keynes’ theory, there is also a connection to government influence on prices. As Keynes described, if the government spends in a way that affects the incomes of the rich, the resulting effects on the economy will be materially different than if the incomes of the poor are changed (Keynes, 1936). In the context of affecting change on market prices, it would make sense that an increase in the income of the lower income brackets of society without any additional increases in production capacity (supply of the consumer goods) may cause prices to rise. This relationship will be explored further in the later sections of this paper as a method for offering policy solutions using this theoretical background.

In modern market economies, production expands and contracts to meet the consumption desires of the participants. In the case of the government, it too can be qualified as a consumer

even if that role is significantly different from others. In viewing government expenditures as having a Multiplier Effect, pricing power is similarly viewed as being affected by government expenditures. As previously established, when the government spends, that money is income for the private sector that then spends a proportion of it, further increasing aggregate demand (Keynes, 1936). In doing so, the government also is establishing the price of a good or service through the action of purchasing. If the government contracts to buy a Ford car for thirty thousand dollars, they are valuing a dollar at $1/30,000$ of all of the inputs, labor and profit margin of the Ford. Ford then goes out and finds the inputs that can satisfy the end price and meets their costing formula for the car. In this example, the government is pushing currency to the private sector through purchasing the Ford car, but it also is creating buying situations for all of the inputs and the eventual wages for labor. This input pricing will be explored later in the section on procurement contracts as there is significant importance in this method of government spending.

The Multiplier Effect can be seen in the ways in which government purchasing creates economic activity. By doing this, the private sector is transacting in reaction to government activity thus affecting price levels. This can be through the primary purchase of a good or service by the government but also through the resulting transactions needed to produce that good or service. The further purchase of inputs and labor by the seller/producer and the resulting valuation of the currency against all other goods and services is a result of government pricing power. In this paper's view of the Multiplier Effect, government expenditure and market prices reflect both the government price set by the purchase of a good and the resulting purchase of inputs needed for production of the good that takes place between private firms. Additionally, the prices for the inputs may move depending on market dynamics or they may move as a direct

result of the price paid by the government. These dynamics will be explored further in this paper to offer a more defined view of how government pricing power is seen in different markets.

This paper is therefore extrapolating an example of the Multiplier Effect to market prices as a result of government purchases. When the government purchases a good or service, they value the currency against that good or service (and all of the inputs). Therefore, the valuation of goods and services against the currency is projected out into the rest of the private sector in the same way consumption is through the Marginal Propensity to Consume. Firms will also look to sell their goods and services to other private sector participants at the established price. This is due to the existence of cost formulas as established by Andrews which were established as a result of the government purchase. This idea is important to include in the discussion of government pricing powers as it relates to the entirety of the private sector.

Chapter 2: Applying Post Keynesian Pricing Theories to Government

Actions:

Subsidies and Guarantees 2.1:

To examine how different government fiscal policies affect prices, this paper has focused on three major vectors of action. As previously described, this focus will be limited to procurement contracts, subsidies and guarantees and price setting/controls through the examples of the OPA and the NEP. Some additional methods of government intervention include monetary policy and taxation. While the theories about monetary policy have a significant body of academic literature, this paper will not rehash this existing body of work. Additionally, taxation is only touched on briefly in this paper to describe the nature of the currency. However there is no included discussion of the uses of tax cuts or increases as these are not of significant importance to the discussion of government pricing power. Therefore the influence of the taxation aspect of fiscal policy is relegated to the periphery.

Instead, the focus of this chapter will focus on the less theorized methods through which the government affects market prices. Traditional views of subsidies and guarantees, procurement contracts and the price controls do not account for the Post Keynesian pricing theories, MMT and Multiplier Effect which this paper has already described. In addition to understanding the ways that these fiscal actions affect prices, there will also be inclusions of targeted policy choices that can be made to pursue the public purpose using these new understandings of government pricing power. In the case of each fiscal policy, viewing the resulting pricing effects can be used to outline the government's influence on market prices.

In beginning this analysis of government actions, this paper will first examine the use of subsidies and guarantees in affecting price levels. Subsidies and guarantees describe a broad swathe of fiscal policy measures that are aimed at affecting market prices. Whether it be tariffs instituted to make domestic goods more competitive compared to imports or price supports to provide increased revenue for certain industries, there are a variety of policy measures that fall under this category of government action. This category is a well known method in which a government affects price levels in market economies and as a result holds importance in examining government price setting overall.

The buffer stock is an easy and simple example of direct control of prices by the government using a subsidy/guarantee. The concept relies on the price for a certain good to be set and supported by the government. If the market price falls below the set price, the government will buy up enough supply of the good to raise prices back to the level it desires. If the market price rises above the set price, the government will then sell its stock of the good to increase supply and thus provide downward pressure on the price. In essence this creates a government guarantee that the good will be able to be sold at a minimum price. If the market won't purchase at that price then the government will. Therefore, a market price is set by the government to the level that they are willing and able to buy and hold the good regardless of supply. With an unlimited budget, the only limit to this is physical storage capability.

A modern example of a buffer can be seen in the United States' Strategic Oil Reserve. The government purchases millions of barrels of oil for future governmental use/need and also to act as a buffer stock for one of the most important inputs of the American economy. If oil prices rise, businesses incur more costs that are then passed to consumers, limiting the amount their dollars can buy. Additionally, the price of oil can be supported to protect the oil industry in the

United States. This buffer stock can be used to address the problem of severe price volatility for oil as the government can attempt to move prices by introducing or removing supply of oil. This power was recently exercised by the Biden administration with the express aim to “As Part of Ongoing Efforts to Lower Prices and Address Lack of Supply” (White House Briefing Room, 2021). Although this a useful example of current use of a buffer stock, the Strategic Oil Reserve is seemingly unable to make a difference in helping lower price for the commodity. Data on the price of Brent crude oil showed that the market price had surpassed the level from when the Biden administration released oil from the Strategic Reserve less than two months later (Fed Oil Price Data, 2022). This may be due to the size of the oil market and how global commodity markets as a whole operate. The dynamics of commodity markets and the ability of the government to affect their prices will be explored further in the section of procurement contracts.

In viewing a buffer stock as a price control via government guarantee of price, a Neoclassical view of supply and demand is somewhat relevant. As Kalecki described, the example used above of gasoline is a good with demand-determined price that, as a commodity, has a very simple pricing mechanism (Kalecki, 1954). Even with the psychological factors discussed above, production cannot be expanded quickly enough to meet short term demand shifts. Since there is a precedent that the government will attempt to control the price of gasoline to a reasonable amount of price variation, the costing formula of businesses, as established in Andrews’ *Normal Cost Theory*, can be projected into the future with more stability. With perpetual buffer stocks, businesses could accurately project costs of certain inputs out into the future, giving more value to this pricing theory. However, in viewing the application of a buffer stock, Neoclassical theory falls short in its total application. With traditional economic theory comes the assumption of government budget restrictions. Therefore, a MMT view of the

government budget makes for a more positive outlook on buffer stock usage. With no limit to government purchasing, the price level can be supported in perpetuity.

Another use of a buffer stock that has been debated and argued for is that of a government job guarantee program (Mitchell and Mosler, 2006). The creation of a wage price level set by the government via this program applies an MMT view of the government's spending abilities. In outlining their view of a job guarantee program, Mitchell and Mosler first defined the current view of the employment-price relationship. In their paper, they define the current view of the unemployment buffer stock being an indicator of overall economic price levels (Mitchell and Mosler, 2006). The authors describe the current view of government central banks that a certain level of unemployment or rather the threat of it suppresses wages. With wages suppressed, workers will spend less and therefore demand will be met at the price which workers can afford (Mitchell and Mosler, 2006). This prevents wages from pushing prices higher and increasing inflation which is detrimental to the overall economy (Mitchell and Mosler, 2006). However, this practice leaves a lot to be desired and the paper describes the failure of this model as one of both economic and social inefficiency.

The authors of this paper highlight the problems with allowing for any type of elevated unemployment for an extended period of time. They define the damage of unemployment as "the depreciation of human capital, family breakdowns, increasing crime and increasing medical costs." (Mitchell and Mosler, 2006). As established throughout this paper, the goal of the government is to protect against and actively work to prevent such negative effects of unemployment. Yet this is a common occurrence and an active practice used to control prices (Mitchell and Mosler, 2006). However, the authors provide the job guarantee as a far better option to prevent the negative effects of unemployment and establish a steady minimum wage.

This will be shown to be a benefit for the economy far outweighing any possible initial inflationary pressure.

In aiming to set a price level for wages, the job guarantee sets a price level for an important part of aggregate demand. Mitchell and Mosler describe it as “the public sector offers a fixed wage job” that is open to “anyone willing and able to work” (Mitchell and Mosler, 2006). With this job offering, the job guarantee creates a “buffer stock of employed workers.” (Mitchell and Mosler, 2006). What this establishes is an employment program that operates in perpetuity. In doing so, the government is spending as it needs for the amount of employed people and those people are in turn consuming, creating demand for goods and services. Should the private sector fall into recession, the government would see an increase in the number of people employed through this program (Mitchell and Mosler, 2006). This relationship is a prime example of counter cyclical government spending to counteract the negative effects of a recession. This consists of both loss of demand as a result of recessionary pressures but also the social damages that come with unemployment.

With this idea of preserving societal health and workers skills, the authors also highlight an important employment practice discussed in Means’ theory on *Administered Prices*. Mitchell and Mosler offered an important Post Keynesian view of private industry in relation to meeting demand. In their paper they wrote, “in today’s demand constrained economies, firms are likely to increase capacity utilisation to meet higher sales volumes.” (Mitchell and Mosler, 2006). As we have established in our analysis of Means’ *Administered Price Theory*, when corporations are experiencing increased demand, they more often move to increase output rather than raise price (Means, 1935). If workers choose to work within the job guarantee program instead of remaining unemployed, they are “likely to have retained higher levels of skill than those who are forced to

succumb to lengthy spells of unemployment.” (Mitchell and Mosler, 2006). With this understanding, a job guarantee would then decrease cost and time needed to increase production to meet increased demand. Private firms would need to simply offer higher wages than the job guarantee minimum wage and they would be able to hire workers with higher skills set than if they were hiring from an unemployed pool. This would reduce time needed for training and mean that any demand price pressure on goods markets would be lessened due to increased production speed.

This proves to be an additional benefit of the job guarantee program. As this paper notes, corporations set their prices based on their costs rather than a market price derived from matching supply and demand as traditional theory suggests. As we have also discussed, this does not seem to apply to commodity markets. This means that any additional cost that can be avoided in terms of labor training would prove to be a benefit for the companies in terms of meeting demand faster but also in their ability to keep their prices stable. If they do not have increased overhead costs of training to get workers up to speed, they would not have to raise their prices to cover that additional cost. The job guarantee as outlined, offers a policy option for a useful version of a buffer stock.

Subsidies and guarantees have been clearly outlined as an important method through which the government exercises its pricing power. While there are other examples, this paper worked to outline a specific example of a buffer stock system. This system encompasses both ideas of a subsidy and guarantee for both consumers and producers. Should the market price fall below the buffer stock level, the government subsidizes the producer. Should it rise above the level, the government guarantees a lower price for consumers. The government therefore establishes a price as far as they are able to continue the buffer stock system. As noted in this

paper, a modern commodity buffer stock may not be feasible and thus, the idea of a job guarantee seems a more plausible use of the buffer stock system. A job guarantee would go a long way towards establishing general price stability and improvement in both aggregate demand and in the aim of pursuing the public purpose as described.

Procurement Contracts 2.2:

In continuing with this paper's analysis of government pricing power, the broad usage of procurement contracts provides another example of how government consumption affects prices. When a specified amount of government consumption is funded through a budget, spending that money by means such as procurement contracts creates a reaction from the private sector. This is the basis of the public-private economic relationship in pursuing the public purpose. The government outlines its consumption by creating procurement contracts to purchase the goods and services needed. As they should in a market economy, firms move to satisfy this demand while earning profits and gathering market share. As this section will explain, the nature of procurement contracts is undertheorized and can be more accurately understood using Post Keynesian pricing theories MMT and Keynes' Multiplier Effect Theory.

When a procurement contract is created, bidding almost always takes place to find the best option for the government to make its purchase. This is viewed as the most efficient way for the government to obtain goods and services as the bidding process offers a competitive marketplace for the contract. Companies need to know their input costs of production to give the government a bid for the contract and in that way the markets for those inputs will be directly affected. As this paper has shown through analyzing Post Keynesian pricing theories, businesses do in fact know their input costs as they take current costs and project them into the future (Andrews, 1949). In constructing procurement contracts, the government is simply asking for a

corporation to provide them a quote for a set amount of a good and an understanding of their costs thus establishing a price. As the firms have established their cost structure, the remainder of the bid is adding profit makeup. This is accounted for in Andrews' theory as well and reinforces the understanding that this price theory is representative of current business practices (Andrews, 1949). From this analysis, it is clear the structure of procurement contracts is similar to that of private firms.

Procurement contracts are therefore to make it as simple as possible for firms to meet the demand of the government. However the contracts may require different lengths of time for production and delivery as well as the creation of new equipment or technology. Therefore, there are different types of procurement contracts used to incentivize firms to bid for contracts that may be long term and complicated. Some examples of two different contracts are fixed-price contracts and cost-plus contracts. Both are used by the United States government and are important in understanding how government consumption through these contracts affects the price of the goods.

For fixed-price contracts, the incentive for the firm is to both achieve the highest possible price for the contract while remaining competitive enough to win the contract over competing firms. At the point of accepting the bid, firms are then incentivized to cut costs along the production timeline to maximize profit at the agreed upon price (Bajari and Tadelis, 2001). This cost cutting may not be possible if the competition for the contract pushed the bid low enough so that there is no ability for firms to improve profit margin and still deliver a product of the desired quality. Once the contract is created, bid on and finally signed, the delivery of the goods must legally take place within the given time period. In normal private market transactions, firms may

not have a contract of this sort signed and instead rely on predictions for what demand will look like in the future.

Another type of contract, cost-plus, provides the government with another way to pay for a good or service through procurement contracts. For cost-plus contracts, firms simply agree to a contract that covers all of their production costs plus a given, predetermined profit markup (Bajari and Tadelis, 2001). While this type of contract may be more useful for projects with more risk of failure or extensive capital requirements that could bankrupt the contracted firm, it creates a different incentive structure for firms (Bajari and Tadelis, 2001). Since all costs will be covered regardless of dollar amount, firms have no incentive to curb costs (Bajari and Tadelis, 2001). While this may be negative and inflate the cost of the contract, it still accounts for the same pricing practices that Andrews' theory highlights. Clear stipulations are made for profit and for the covering of costs that are projected out into the future from the present.

As is clearly evident with the structure and use of procurement contracts, the ability of the government to set prices is clear. In stating demand through procurement contracts, the government has the direct ability to select the price at which a good or service will be bought. As a result, the firms and government establish both the value of the specific good but also the inputs and labor. Therefore, procurement contracts are very clearly an example of how the business world and government already understand Post Keynesian pricing theories as well as government pricing power. The bidding/selection process clearly establishes the government as the price setter for the good or service.

With that being said, the use of procurement contracts would reasonably create pricing changes in a specific market while also affecting prices in connected markets. As Kalecki established, *demand-determined* prices for primary goods or commodities are generally the

inputs for secondary goods (Kalecki, 1954). If large amounts of a commodity are purchased as an input for a contracted product, that spike in demand will show directly in an increase in market price due if the delivery period is too short for supply to be increased. It can then be projected that, while the secondary goods market price will be affected by the price agreed upon in the procurement contract, the primary goods markets that make up the inputs will similarly be affected.

Understanding that procurement contracts may ultimately lead to price movements in connected markets is therefore important for understanding government pricing power. Not only will a procurement contract for a thousand computers affect the price at which those computers may be sold thereafter, but the contractual creation of large, well defined demand would allow for inputs to be bought in bulk, raising those prices as well. Procurement contracts allow for firms to develop accurate demand predictions as well as costing formulas if inputs can be bought at the predicted price. These bulk purchases may raise prices in demand-determined prices for inputs and thus, the government has further increased the costs for all other firms that use those inputs. By establishing clearly defined demand that must be supplied within a specific timeframe, input markets may not be able to increase supply in a timely enough manner to meet demand at the current price.

In outlining the dynamics of input markets, it can be seen that private industry also creates a version of a buffer stock. In his paper describing commodity market dynamics, Robert Pindyck writes, “In a competitive commodity market subject to stochastic fluctuations in production and/or consumption, producers, consumers, and possibly third parties will hold inventories.” (Pindyck, 2001). All market participants clearly are volatility averse when it comes to commodity markets (with the exception of the speculators who could stand to profit from

volatility). These inventories provide an opportunity for firms to react to demand situations that their predictions did not account for. Firms' predictions for the future of their business form the basis for the level of production and cost formulas. By creating inventories, private firms are attempting a smaller, decentralized version of a buffer stock as a way to protect themselves against volatility.

In doing so, the commodity markets clearly show a desire to have a cushion against demand/supply fluctuations. Should a procurement contract deplete the combined inventory of a commodity market, input price volatility could be seen as a direct result of government procurement. Pindyck describes that these volatile price movements tend to be a result of static inventory capacity and production capacity in the short term (Pindyck, 2001). In the long term, both production and storage could be increased should demand be similarly increasing. In their current form, private inventories are clearly not substantial enough to prevent such price movements as can be seen in the continued volatility of commodity markets. It would seem that a commodity buffer stock, held by a government, would be welcomed by both producers and consumers of commodities.

Should commodity input prices be more stable, the firm using the inputs to create secondary goods would find procurement contracts to be even more attractive. The demand that is contractually stable and a buffer-stock supported price for inputs would allow for precise cost formulas and projections to be given in their bid for the contract. However, in the current system, should the input markets be unable to meet increased demand at the given price, the corporation may find the agreed upon contract price to offer less of a profit margin than projected. This is a risk for the firm as a result of the structure of the contract. Thus the difference between fixed-cost and cost-plus contracts becomes increasingly important for the firm.

So far, this section has focused on two main pricing situations, the contract for goods or service and the inputs for those goods. These are two effects of government price setting powers through the procurement process. For the contracted good, the price setting relationship is clear. The government simply states their level of demand and time frame for delivery in the contract, asks for bids and receives them from the private sector. The simple action of selecting a bid in effect, sets a price in the marketplace. The transaction for large quantities of goods helps create the cost formulas that then form the basis for further production. This means that the firm would be able to produce and sell the good at the same price as the contract should costs remain the same.

As previously outlined, the relationship between procurement contracts and input markets is somewhat more complicated. If the contract requires delivery in a time period where input markets cannot match supply and demand, input prices would likely increase. While some input markets would undoubtedly have excess supply and would be able to absorb additional demand, others may not. This may be a result of insufficient inventories as discussed previously and the price volatility could be resolved with a government buffer stock. Therefore, government economic activity through the usage of procurement contracts would seem to directly affect price levels, not just in terms of the finished goods contracted for, but also for the businesses and industries that use the same inputs. As this paper noted, the timeframe of the contract matters significantly for input markets' ability to meet demand and thus produce and sell inputs at the same price. In this sense, longer term procurement contracts may provide increased price stability for both the goods being produced and the inputs used for production.

Historical Price Controls 2.3:

The Office of Price Administration is a very important example of government pricing power. This paper will examine the OPA to evaluate the ability and power of the government to set prices in response to the desire to satisfy the goal of pursuing the public purpose. The OPA functioned as a direct counter to the pricing pressures expressed during the demands of war production. While the discussion of why the government needed the OPA can be debated on a political basis, its express purpose was to control prices during a volatile time where the economy's production was focused on the war effort. In this way, the government pursued a path of protecting society from rising prices that might harm the quality of life of the citizens. With this understanding, further examination of the role of the OPA will show a Post Keynesian understanding of markets and economics that was used to stabilize prices for the benefit of the citizens of the nation.

The idea that the government establishes prices for markets may seem dangerous to some who fear the role of large government. Yet in some of the most dangerous moments in our nation's history, explicit price controls by the government were necessary. An example of this is the introduction of the OPA or Office of Price Administration during World War Two (Jacobs, 1997). The OPA or Office of Price Administration was a creation in the form of the New Deal federal agencies giving the government more say in the economic activity of the nation. In order to control the inflation that was predicted to come from wartime changes to the economy, the OPA was formed to control the prices of an important basket of consumer goods (Jacobs, 1997). This was in response to the memory of inflation that followed the First World War (Jacobs, 1997).

That price inflation could be seen as a result of government demand being inelastic for the goods it needs to win the war and thus as quantity increases prices can be raised very quickly. In wartime the need to produce the planes, tanks and guns required for modern armies to fight was massive and turned whole economies towards the war effort. In this way the OPA became a subject of propaganda as huge numbers of people became volunteers in making sure price controls were adhered to (Jacobs, 1997). Inflation became viewed as an enemy the nation needed to actively fight to win the war and thus, the price controls took on moral necessity (Jacobs, 1997). This is a clear example of the conscious aim of the government, to protect and benefit the social good of its citizens. In this case, the market economy of the nation was adjusted drastically by fixing prices.

In application, the work of the OPA is well documented and an understanding can be readily drawn. As inflation was kept to a minimum and therefore actively controlled, people found their trips to the grocery store or plans to buy a new car to be much more predictable (Jacobs, 1997). Along with rationing that offered further controls on demand, the government exercised a strong measure of control on many market prices through the OPA (Jacobs, 1997). While price controls were actively set to achieve this goal of inflation control, the results were only as good as the political will to continue them. As the war began to end, its use came into question. Does the United States really need these controls? The firms operating in these price controlled markets had a strong opinion and once the moral imperative of war left, so did their need to remain quiet (Jacobs, 1997). In her article describing the usages and history of the OPA, Meg Jacobs highlights the importance of public opinion and lobbying in connection to price control systems.

As Jacobs defined, the role of social acceptance of price controls played an important role in the example of the OPA. As this paper will additionally include, further literature by J.K. Galbraith found a similar measure of success in the intricacies and application of the price control system (Galbraith, 1946). This will be explored later in this section however the importance of social acceptance was clearly fickle as described by Jacobs in her paper. She wrote, “By mobilizing thousands of shoppers and consumer activists as volunteer price checkers, OPA reinforced the wartime interpenetration of public and private spheres. OPA called on women to enforce stabilization not only in their homes but also in their communities.” (Jacobs, 1997). This description of the height of acceptance and efficiency of the OPA shows just how broad the support for the program was.

In the end however, the program met its demise in reversal of this opinion and broad support. Jacobs describes the role the meat producing/packaging industry played in the turning of public opinion against the OPA. She wrote, “The American Meat Institute, the packers' trade association, therefore routinely blamed OPA policies for the disruption and contamination of the country's meat supply. In ads and press releases, they regularly invoked the specter of the black market and "extremely serious" shortages.” (Jacobs, 1997). This lobbying and fear mongering slowly turned the public against the OPA price control regime. The eventual loss of public support, as described in her history of the department, spelled the end for the OPA according to Jacobs (Jacobs, 1997). In continuing the examination of the Office of Price Administration, this paper will now shift away from the history of the price controls and instead towards a more empirical analysis.

Government pricing power was highly publicized and explicit in the case of the OPA. This example was as a result of a nationally recognized need and thus carried moral emphasis.

The argument was that the existential need for the country to control prices and the oncoming behavior of producers at the onset of war was a necessary moment to implement the price control system. However, the eventual failure of the system leaves room for debate on whether or not there might be a current application for this type of pricing controls. In the case of price controls, it seems that certain market participants benefit from those price controls. In the case of consumers and producers of finished goods, having constant input prices is of benefit to their consumption habits. On the other hand, the price controls limited profits for the producers of the controlled goods and thus there was an economic incentive for them to lobby for the ending of OPA price controls. Therefore, the application of the price control regime is of interest to this paper's exploration of government pricing power.

The OPA had extensive support from the public and there is much to be examined from an economic standpoint in how the department affected the economy. In general, prices are assumed to be formed as a result of the forces of supply and demand and that without these forces, there would be market failures and inefficiency. In the case of the OPA and the time period of its existence, this was found to not necessarily be the case. Life could continue on, businesses could operate and markets could meet demand at the given prices. With that said, there were significant caveats to this example that need to be explored to understand if the OPA was a success or not. In his paper describing his experience with and opinions of the OPA, J.K. Galbraith (1946) discusses the usefulness of price controls.

One of the major factors Galbraith outlined in discussing the nature of the price control system was in an accompanying consumption control mechanism. During the war, rationing was used to be able to redirect goods and services to the public sector needs associated with winning the war (Galbraith, 1946). In outlining the theoretical debate among economists regarding price

controls he wrote, “But many, if not most, would have argued that the fixed price, to be effective and permanent, would have to be supported rather promptly by some system of consumer allocation or rationing.” (Galbraith, 1946). This is an important understanding for any current possible application of price controls because without instituting rationing, Galbraith described a different outcome to the one experienced. He wrote, “Merely to fix price ceilings would be to invite a large-scale conspiracy between sellers who would willingly receive and consumers (or producers) who would willingly pay more than established prices.” (Galbraith, 1946). This is a rather large danger in a price control system that would lead to an illegal marketplace for the goods the public wants or even worse, the legitimate businesses simply refuse to follow the pricing rules.

This point is important in Galbraith’s assessment of the theoretical framework for the OPA price controls. Galbraith stated that, “There was no prospect of taxes or compulsory savings high enough to bring aggregate demand into balance with aggregate supply, and some of us were just beginning to suspect what many have since concluded - that price stability achieved through tax and saving policies was a rainbow one might chase indefinitely.” (Galbraith, 1946). The goal of depressing non-government demand to meet supply through these fiscal methods seems to be well understood as inadequate. Therefore, rationing was integral in the success of the OPA during the war years.

Yet Galbraith also outlines how this determination of necessary rationing had only been used for certain goods. The overall experience during the OPA price regime was that some goods were rationed and others not and the controlling price levels were still successful on aggregate. He writes of this in the following description, “For only part of the period and for only part of the total stock of goods has demand been adjusted to supply by rationing or its equivalent. Prices,

withal, have been comparatively stable.” (Galbraith, 1946). So while the predicted gap between excess demand and supply existed, the price controls did not create the aforementioned problems Galbraith had described as the theoretical consensus (Galbraith, 1946). Instead, the price controls seemed to work with only partial rationing and were successful at achieving the desired results.

In his writing on the OPA, Galbraith offered an extremely important understanding of how this success was possible. The conventional wisdom failed to explain how the price controls functioned as they did. Galbraith described the following, “It was moderately effective for primary metals, coal, and petroleum before or after they were rationed or allocated, for houseroom throughout the war, and for scores and hundreds of other producer's and consumer's goods from (latterly) farm machinery to breakfast foods, when there were no formal controls.” (Galbraith, 1946). Yes, rationing was present at different points throughout the war yet the point Galbraith makes is that rationing was present in specific cases and was alleviated during the course of the war and the price controls held (Galbraith, 1946). This is an important takeaway from Galbraith’s analysis of the OPA price controls.

As this paper has previously discussed, certain product markets are not as perfectly competitive as traditional theory claims. Monopolies exist as well as firms with large market share that can play an outsized role in price setting as described in Kalecki’s *Markup Price Theory* (Kalecki, 1954). Galbraith explains the same reality in his discussion of the OPA. He wrote, “Monopolistically competitive or imperfect markets lend themselves readily to these informal controls, and price control was effective because these markets are rather more common than was conventionally assumed before the war.” (Galbraith, 1946). Galbraith highlights that consumers may be used to steady prices in markets with imperfect competition and thus, price

controls will not affect their consumption habits (Galbraith, 1946). This description of American markets is an important takeaway from the discussion of the OPA.

Further explanation of this reality was easily found in Galbraith's more detailed description of the OPA price controls. "It was commonplace in OPA experience that the primary metal markets, where sellers were few, were relatively easy to control without formal allocation. The secondary metal markets, with numerous sellers, were far more difficult to control without allocation." (Galbraith, 1946). This quote is important in understanding any current possibility of introducing price controls. As this paper has outlined, market dynamics through the United States have changed drastically as firms accrued market share (Grullon, Larkin and Michaely, 2019). These types of markets exhibit the type of prices described in Means' *Administered Price Theory*, where firms with market share set prices for long periods of time (Means, 1935). Therefore, the idea that price controls could never work without rationing is clearly disproved by a combination of current market dynamics and historical realizations of Galbraith.

This existence of *Administered Prices* was discussed at length in Galbraith's paper. He cites Means, as does this paper, in describing the way prices were already being set by companies before the OPA price controls. He writes, "The phenomenon of inflexible prices had been well-observed before the war(6), but so far as I am aware, and for good enough reasons, no one had observed that this inflexibility would greatly facilitate war-time control." (Galbraith,1946). The footnote (6) denoted a short description of the economic theory regarding inflexible prices which was in part a result of Means' work. Therefore, Galbraith claimed that consumers were somewhat indifferent to stable prices set by firms or by the government (Galbraith,1946). He established this with a comment at the end of the section when he wrote, "I am tempted to enunciate a rule that is all too self- evident in this discussion: it is relatively easy

to fix prices that are already fixed!” (Galbraith, 1946). As this paper has discussed, concentrated markets with *Administered Prices* are both common and easily regulated in the case of government price controls.

Further in his description, Galbraith touches on the regulatory structure of price controls and how concentrated markets interact with regulators. The existence of only a few sellers/producers means there are fewer firms to watch for the designated enforcement department, in this case, the OPA (Galbraith, 1946). Additionally, the social structure of large corporations is characterized by a disconnect between ownership and labor. This disconnect allows labor to report their company’s leadership/owners in the case of price control violations (Galbraith, 1946). The nature of American business and industry set the stage for ease of enforcement for the price controls. Combined with the previously described tendency towards *Administered Prices*, the consumer or employee would be very aware of violations and have little barriers to reporting violations.

In his paper, Galbraith further describes the social adherence to the price controls, “Without doubt the present generation of price administrators has had a more law-abiding generation of businessmen with which to deal than their even less happy predecessors. And a community that has come to regard war as a tragedy stigmatizes illegal profiteering as a more heroic age did not.” (Galbraith, 1946). The public was clearly made aware of the necessity of the policies. The opinion of the nation was such that producers faced a broad base of consumers unwilling to break from the price control system. Therefore, producers had to wait for public sentiment to turn before they could begin pressing for the controls to be lifted as described by Jacobs in her history of the OPA (Jacobs, 1997).

The ways in which prices are set as the sum of costs plus profit is unchanged by the introduction of price controls and thus selling of their products can remain unchanged (Galbraith, 1946). He wrote that instead of price gouging, sellers would “sell off his limited stock at his accustomed markup.” (Galbraith, 1946). This shows the understanding that the business in question already satisfied their pricing formula and felt no strong need to violate the price controls as a result. Galbraith’s analysis ties into the Post Keynesian pricing theories established by both Kalecki and Andrews to show how price gouging may not occur in times of crisis where price controls are implemented. Even in the face of profit seeking opportunities, the market consensus was to not do so and retain price levels in line with regulation.

Another understanding Galbraith described is the way in which price increases move through economies. In preventing the initial increases of prices, the government hoped to prevent an economy-wide tendency to price increases. Galbraith described the idea held by many that, “Any increase is, in some measure, a precedent for others.” (Galbraith, 1946). This is included to show that price controls could be more effective if implemented before price increases begin. Since firms price goods based on current costs projected into the future, they may try to increase prices to protect against input costs rising, thus spreading inflation throughout the economy.

While the OPA operated in a time of war, the price controls instituted by the Nixon administration did not. The Nixon administration created price controls in reaction to an economic crisis and will be discussed to offer another example of price control application. The introduction of the NEP or New Economic Policy in 1971 in response to an economic distress being experienced in the United States (Williams and Bennett, 1972). However, the understanding of the Nixon price controls is that they were seemingly ineffective (Mitchell,

1975). The differences between the NEP and OPA will be examined to allow for a better analysis of this form of government price setting powers.

The Nixon era price controls took a different approach to repressing price increases. The following is from the Department of State, Office of The Historian website: “By the 1960s, a surplus of U.S. dollars caused by foreign aid, military spending, and foreign investment threatened this system, as the United States did not have enough gold to cover the volume of dollars in worldwide circulation at the rate of \$35 per ounce; as a result, the dollar was overvalued.” (Office of The Historian, 2022). In the example of Nixon's NEP price controls, the currency was pegged to a precious metal commodity, gold. The Gold Standard was a creation of the Bretton Woods System that helped establish the global monetary and financial system that was put in place after the Second World War (Ghizoni, 2013). As the system came under pressure and the United States suffered an economic downturn, the Nixon administration acted drastically (Office of The Historian, 2022).

The NEP was different from its inception compared to the OPA. The NEP was not instituted in response to a global war and instead, as a response to an economic crisis. The dollar was under pressure due to the Gold Standard Convertibility that was a tenet of the Bretton Woods system. The imbalance between dollars and the amount of government gold reserves meant the dollar was considered overvalued against its peg (Office of The Historian, 2022). Since there was new issuance of dollars and thus an expansion of the money supply, the peg came under increasing pressure, forcing the United States to take action. In instituting the NEP, Nixon not only put in place price controls, but removed the currency peg, ending the gold standard (McCracken, 1996). In doing so, the return of a fiat currency created new floating exchange rates and a revalued dollar.

The public monopoly right to issuance and therefore control of value of the currency as described in the section on MMT became a reality as a result of the end of the Gold Standard. This is a very important part of the NEP and in part explains the price volatility after the price controls were lifted. These price controls were on both prices and wages instituted to curb inflation (McCracken, 1996). However, these price controls were different from those of the OPA. The NEP instituted the price “freeze” for a set period of time of ninety days, leaving both business and labor to have a clear timeline for when the controls would be removed (McCracken, 1996). In establishing a very clear timeframe for the price controls, the government sent a message to businesses as well as currency speculators.

Instead of continuing the price controls for a long period of time and raising prices slowly to keep businesses able to cover costs and earn a profit, the Nixon administration used a short term version of price controls. By using this short term version of price controls which amounted to only a brief period or inflationary respite, businesses in some cases may have been able to simply wait out the limitation of the price controls. As experienced after the dissolution of the OPA, the prices of goods and services would automatically be repriced when the price controls were ended (Rockoff, 1981). The data provided by Rockoff shows price volatility after the price controls of both the NEP and OPA to be significant (Rockoff, 1981).

As this paper has established using Andrews’ *Normal Cost Theory*, businesses price their goods and services using projections of costs into the future (Andrews, 1949). Therefore firms may still view high future inflationary pressures on their inputs as continuing and simply increase prices after the price controls were lifted. With the short term approach to Nixon’s NEP price controls being impractical, there is another understanding for how they could be generally viewed as unsuccessful. Instead of viewing the price controls through the same lens as the OPA,

the NEP came with added volatility associated with an abrupt and massive monetary regime change. The removal of the Gold Standard meant the dollar would immediately be revalued and all goods and services along with it.

As established in the section discussing the MMT view of currency, the government sets the value of all goods and services in relation to the currency. While that entails direct pricing power being in the hands of the government, in the example of the NEP, moving from a precious metal valued currency to a fiat currency would involve immediate volatility as the market reprices the currency. As there had already been pressure on the peg as a result of currency markets believing the dollar was overvalued, the removal of the peg completely caused extreme price volatility (Fed Inflation Data, 2022). Since the gold standard had disturbed the government's price setting power as the issuer of the currency by setting it to a peg with gold, the government was valuing all goods and services against gold. When the government removed this peg, they retook direct pricing power even if it seemed that the wild volatility from revaluing the dollar implied the opposite. With the fiat currency, pricing powers as described throughout this paper became directly available to the United States' government.

This relationship becomes the most important lesson from the Nixon administration's NEP price controls. The government was able to retake a certain amount of pricing power in removing the Gold Standard from valuing the currency. As a result, the purchasing of goods and services by the government now has a far more direct effect on the prices. This relationship between fiat money and the monopoly issuer of the currency still exists and thus has been discussed in detail in an earlier section of this paper. While the NEP may have seemed to fail in the aim of halting inflation and price volatility, it did lay the foundation for modern prices to be more controllable by the government. With the monopoly issuer relationship reestablished, the

government can set prices as a result of the currency being valued against the goods and services it purchases, not a commodity peg.

The examples of the OPA and NEP are important in outlining the possible modern use of a price control system. While price controls are the most explicit form of government pricing power, they are also seemingly the most difficult to justify. The success of the controls relies on the broad adherence of the population and the private sector firms. Even in the case that this support exists in one moment, over time that support may wane, tying a government to an increasingly unpopular form of government intervention. As described in this section, the time frame of the price controls are also important. At the end of both examples, prices moved violently as markets revalued goods and services. While they were able to successfully control prices during the controls, as the end came closer, it became more difficult to enforce. This seems to be the major takeaway that, while price controls work for certain periods of time, there is great difficulty in removing the controls without causing extreme movements in prices.

Conclusion:

Understanding government pricing power has been misunderstood throughout the history of economic thought. The differences between theories on how an economy functions would have led to the under-theorization of the role of government in setting prices. As this paper has established, analyzing both the private and public sectors must be done through the same theoretical lens to offer an accurate picture of government pricing power. In outlining the main arguments of this work, the final section will focus on the nature of government economic activity as it relates to price setting instead of price taking. This pricing power will be concisely defined and discussed as the main findings of this paper.

As firms look to price their goods and services, they make a series of decisions described by the Post Keynesian pricing theories this paper highlights. Firms begin establishing prices based on the cost formula described by Andrews in his *Normal Cost Theory* (Andrews, 1949). While this is an important facet of how businesses set prices, this paper has shown there are additional influences on the final price of a good or service. In addition to the cost formula established by Andrews, the work of Kalecki in his *Markup Price Theory* established another component of prices. As described by Kalecki, the final price of the good is strongly influenced by the broader market dynamics and price (Kalecki, 1954). Kalecki's theory includes both the degree of monopoly a firm has as well as market share as important influences on the price (Kalecki, 1954). The firm's market share affects the weighted average price in the market which is an important variable for Kalecki's formula (Kalecki, 1954). This creates the basis for how a private firm establishes the price for its goods and services according to these theories. Now the question remains as to the dynamics of those prices over time.

If markets are competitive, the firms with the lowest costs can outprice the other firms assuming no product differentiation. This would create market concentration that would further entrench firms with the lowest cost structure. As this paper has described, this has already happened in the United States. A paper on market concentration written by Grullon, Larkin and Michaely estimates that the vast majority of American industries and thus product markets have become extremely concentrated (Grullon, Larkin and Michaely, 2019). This market reality establishes a market pricing action as described in the section on Means' *Administered Price Theory*. Instead, the firms with market share establish prices and hold them for long periods of time (Means, 1935). This coincides with the firm's cost and demand projections and therefore the firm is able to project its business operations into the future more accurately (Andrews, 1949). Therefore, this paper has used these Post Keynesian theories to establish a representation of business pricing practices.

With these pricing practices outlined, the main aim of this paper can be addressed in describing government pricing power. By understanding how firms price their goods, government actions can be seen as directly affecting the price of goods and services. In the previous sections discussing subsidies and guarantees, procurement contracts and historical price controls, this paper has given examples of major ways in which a government interacts with the private sector. In addition to these actions, the government importantly issues the currency of account and has direct control of both its value and its supply through well understood monetary policy actions. In focusing on the three major types of government actions while viewing these actions through a Modern Money Theory perspective, this paper has established the government as a price setter currently and offered additional paths to establishing future prices.

An example of policy options to set future prices is found in this paper's discussion on buffer stocks and the job guarantee. As the section on subsidies and guarantees described, a buffer stock provides price stability for both the consumer and the producer. This setting of a price in a market using a commodity buffer stock offers an important look into the ability of the government to establish and control a price. While a buffer stock system can conceivably be created, it may be hard to create a societal backing for a program where the United States props up or holds down a commodity's price globally. The reason being that commodity markets are global and not national and that there may be a general aversion to dedicating government spending to purchasing and storage capacity. This seems to be reason enough to at least shelve the idea of a modern commodity buffer stock aside from limited examples such as the Strategic Oil Reserve which was discussed previously.

While commodity buffer stocks have some limited application, a more useful buffer stock would be that of the Job Guarantee. As this paper has described, the job market and thus the wage at which people are employed can be affected by the government. Instead of allowing large numbers of people to remain unemployed in the hope of preventing inflation, the Job Guarantee offers a different path. In employing those who would have otherwise been unemployed in productive jobs, the Job Guarantee program would help stimulate the economy and increase resiliency (Mitchell and Mosler, 2006). Should a recession take place, the Job Guarantee would employ those whose jobs were lost, preventing large decreases in aggregate demand (Mitchell and Mosler, 2006). Establishing the job Guarantee wage would also establish a de facto minimum wage and thus improve wages in the private sector (Mitchell and Mosler, 2006). This would also help firms predict future demand, even in times of crisis or recession as there would be less volatility in aggregate demand in the economy.

In the case of the United States, this less volatile demand is important in establishing long term market prices. As discussed in the section on the *Administered Price Theory*, in the case of recession or demand declination, firms tend to simply shrink production rather than lower their prices (Means, 1935). This would lend to a situation where firms would lay off workers and leave machines unused rather than lower prices in a recessionary environment. The Job Guarantee helps alleviate both unemployment and the steep decline in demand, allowing for prices to remain at their *administered* levels as well as firms to retain employees. This is due to aggregate demand being higher in a recessionary period with a job guarantee versus without it. The government then controls the national minimum wage as well as price levels of *Administered Price* goods in the long term.

An additional way in which the government sets prices is through the widespread use of procurement contracts. This purchasing of goods and services from the private sector is integral to the functioning of both the public and private sector. As established in the section discussing MMT and the role of government as the monopoly currency issuer, the private sector needs the currency of account to pay their tax liabilities (Wray, 2011). In buying from the private sector, the government sets the price at which it is willing to pay for a good or service. Procurement contracts are therefore a clear example of the government valuing its currency against a good. That price, which we have established is a combination of input costs plus labor plus profit markup, is also establishing value for those inputs. Therefore, the government is valuing many goods or services all at once with a procurement contract. The selection of a bid has been shown through this paper to be a clear use of government pricing power and as establishing the value of the currency.

In the third example of government economic action examined in this paper, two historical examples of price controls were discussed. This was through two very different examples of price controls in the United States, the Office of Price Administration during the Second World War and the New Economic Policy during the Nixon administration. In the case of the OPA, the price controls were viewed as successful in preventing extreme price volatility during the war time period (Galbraith, 1946). In including the discussion and reflections of Galbraith, important discussions on the social and structural realities of the United States at the time described how the system was successful for a period of time (Galbraith, 1946). Galbraith's important claim that social acceptance of the goals of the OPA in assisting the war effort and the commonplace of *Administered Prices* did not seem to disturb consumers is necessary information for any future use of price controls (Galbraith, 1946).

In the other example, the Nixon administration's NEP is viewed differently from the OPA in terms of its success. The NEP allowed for initial price and wage controls for a specific, short amount of time of only ninety days (McCracken, 1996). In addition, the removal of the Gold Standard was an extremely important monetary decision in the breaking of the Bretton Woods agreement and therefore created a far different backdrop than that of the OPA. The differences between the OPA and NEP left important takeaways for the ability of the government to set prices through price control systems.

When there is broad societal support for price controls, it allows policy makers to implement them without worrying about the risk of losing popularity. This risk is constantly present throughout the price control system and therefore, the preservation of the popularity of the price controls is connected with the popularity of the government. Additionally, the popularity of price controls may not be equally existent for the use of wage controls as were

present during these historical examples. This can be inferred as citizens might be more keen on keeping prices flat while increasing their wages, in effect raising their living standards. This balance is a key in making sure price controls with wage controls are sustainable. In the example of the OPA, rationing was present as well as increased savings (Jacobs, 1997). This changed the connection between income and consumption and implies that rationing could be used in conjunction with price controls to achieve successful controls.

Another important lesson from the price control systems instituted in the United States was that of the time frame or length of the regime. If private firms know that the price controls will be lifted at a specific date, they might begin withholding goods. In this way firms could create shortages as they wait for the end of the price controls and thus, the ability to raise prices. This would be a rational view of their projected cost formula as it would change materially upon the removal of the controls. To counteract this, the government would have to remove the controls instantaneously and without warning as a way of preventing firms from increasing inventories in preparation of new prices. However, the institution of price controls would seemingly need to be preceded by a moment of crisis. Upon resolution of the crisis, it seems the support for the price controls might also wane either immediately or shortly thereafter.

This paper has established important understandings for government pricing power. Through a framework of MMT and Post Keynesian theory, the action of government setting and maintaining prices has been outlined. The three vectors of action used as examples offer different views into the nature of government pricing powers. Some of the options are already understood such as the buffer stock. However, the introduction of an employment buffer stock through the job guarantee is a different option to use this version of government price setting. This is an

alternative usage for a price setting method that seems to no longer be feasible in its theoretical form.

Another actionable policy established in this paper is the use of a purchasing program to balance recessionary pressures in *Administered Priced* markets. As described, the loss of demand induces firms to layoff employees rather than drop prices. Instead of allowing this to further dampen aggregate demand, the government can purchase the goods that firms had produced. This would mean firms would retain and continue to pay their employees, helping maintain aggregate demand in the economy. In the case of the beginning recession, this may be a method where the government could protect broad groups of the workforce from layoffs. The only drawback would be the new reality of the government buying large quantities of goods and having to then use or store them. However, should the goods be durable, such as vehicles, the government may find use for them. In viewing the viability of this option, a government could reasonably find use for the goods purchased in pursuit of protecting employment levels.

Another policy option this paper has discussed is that of price controls in a moment of crisis. Should the country experience some extreme crisis that would send prices dramatically higher in a way that would harm the economy, the government has been shown to be able to control this for a period of time. The examples of the OPA and NEP, while both significantly different, were price controls that, for a time, prevented runaway inflation. This paper has worked to show that the success and longevity of a price control system relies on broad public support and an uncapped timeframe. The danger will always remain that the final removal of price controls would immediately create massive price volatility. It may be useful in achieving price stability to implement price controls briefly and then target prices through other means when the time comes to remove the price controls.

The removal of price controls has historically caused extreme price volatility (Rockoff, 1981). In attempting to prevent this volatility, the government may be able to create procurement contracts to be delivered after the removal of the price controls. In effect, enough contracts demanding sufficient volume and covering major product markets might be able to remove any ability of firms to build inventories. If they are committed to deliver goods, firms would be unable to withhold goods from markets eliminating this practice of trying to time the removal of price controls. Should these contracts simply exacerbate the shortages if firms are still able to withhold goods, the government could simply redistribute what was purchased at a discounted price. This would prevent firms from being able to then outlast consumers and charge a higher price. Therefore, use of these different vectors of government economic activity could stabilize prices during and after a crisis.

This paper has detailed the broad ability of the government to exercise pricing power over a market economy. The first chapter sets the theoretical background of how private businesses set their prices as well as the role of currency and government expenditures in prices and economic activity. From this basis, an analysis of a select group of fiscal policies was used to show how government pricing power is clearly present although undertheorized. It is clear from this work that the government operates as a price setter in relation to the private sector and this relationship can be used in pursuit of the public purpose. Policies such as a job guarantee, price controls and specifically targeted procurement contracts can bolster the government's ability to support and strengthen the economy. These takeaways provide an important view of government pricing powers as being a useful method through which the government can affect prices to benefit the public.

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