

# A REAPPRAISAL OF THE SAY'S LAW CONTROVERSY

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I hold that this law must be reinstated as the basic economic reality in the light of which all economic thinking is illuminated.

William H. Hutt

*Keynesianism—Retrospect and Prospect*, 1963, p. 389

**D**espite the pivotal place that Say's Law of Markets held in the early development of economics, no one with any historical perspective can fail to notice its near total absence from today's textbooks. Even as Keynesian theory fades into oblivion, the myth remains that Keynes somehow "disproved" Say's Law and that it is, therefore, irrelevant to modern economic discussion. On the contrary, it will be argued here that the law still stands as both a convincing condemnation of Keynesian policy prescriptions and an indispensable building block for any macroeconomic theory.

Twice in the history of economics there has been a vigorous debate over Say's Law of Markets. Initially the debate was among the classical economists themselves,<sup>1</sup> where Ricardo's apparent victory over Malthus was later to occasion Keynes's (1936, p. 32) famous lament that Ricardo had "conquered England as completely as the Holy Inquisition conquered Spain." Perhaps more importantly, however, a second debate, often called the "post-Keynesian doctrinal controversy," was started by Oskar Lange's (1942, pp. 49-68) attempt to give mathematical substance to the law. Lange's contribution seems to have given impetus to almost all subsequent discussion of Say's Law, but

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<sup>1</sup>See, among others, Say (1853); Malthus (1951); James Mill (1965); John Stuart Mill (1880 and 1968); Ricardo (1957).

even though he greatly facilitated discussion of classical monetary theory,<sup>2</sup> it should not be thought that he settled the issue of the law itself. Though Lange never stated that his version of the law came from Keynes, he gave nothing more than a mathematical statement of Keynes's view. Lange (1942, p. 53) quoted Malthus and Ricardo several times, but Say only once (and that quotation was only a paraphrase). Little attention seems to have been paid to the fact that Keynes's statements in no way corresponded to what Say had originally been discussing.

In the *General Theory*, Keynes (1936, p. 18) characterized Say's Law as "supply creates its own demand,"<sup>3</sup> and stated that it was (p. 26) "equivalent to the proposition that there is no obstacle to full employment." This seems universally to have been interpreted to mean that if wages and prices are flexible, there is a tendency for the economy to move toward a full-employment equilibrium. Say's own writing, however, from which this law is supposed to be derived, is about the production, distribution, and consumption of wealth.<sup>4</sup> It does not discuss any "tendency" the economy might have to move toward full employment, nor does it discuss monetary theory beyond a lengthy statement of the advisability of a commodity standard as a bulwark against government intervention. Although Say's book is often described as a popularization of the views of Adam Smith, it contains a much more thorough explanation of the benefits of free markets and private property than Smith was ever able to give. In addition, his discussion of government intervention in the economy is a clear demonstration of the ineffectiveness of fiscal policy as a wealth generator—a demonstration that is actually *precluded* by the assumption commonly used in Lange's neo-Walrasian framework that only *market* transactions be considered.<sup>5</sup>

#### THE SIMPLEST EXCHANGE IN LANGE'S FRAMEWORK

Lange's framework was given in a well-known algebraic format, but simple numerical examples of market exchanges may be used to show all of the points he made. Assume, for example, that the economy consists of only two people who are neither thieves nor philanthropists, and that they wish to exchange nuts and berries. Any exchange between them will necessarily follow what is known as Say's Principle (that is, any demand must be paid for

<sup>2</sup>See among others, Patinkin (1948, 1949, and 1951) and Becker and Baumol (1952).

<sup>3</sup>The expression "supply creates its own demand" does not appear to have been used before Keynes, but whether or not Keynes coined the term himself is not our concern here.

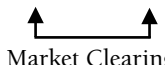
<sup>4</sup>"The Production, Distribution, and Consumption of Wealth" is, in fact, the subtitle of Say's *Treatise*.

<sup>5</sup>See "The Implications for Philanthropy, Theft, and Fiscal Policy," pp. 49-52 below.

by the supply of something of equal market value).<sup>6</sup> If the two people were to sit down together and discuss the way in which the quantities of berries and nuts they demand and supply might vary with the relative price of nuts and berries, they could discover that the quantities are equal if the relative price is set at one berry equal to two nuts. As absolute prices may be expressed in terms of one of the goods (called the numéraire), we may express them in nuts and have the prices be: price of nuts = 1, price of berries = 2. If the exchange that takes place is, for example, that A gives B 3 berries in exchange for 6 nuts (which, of course, means that B gives A 6 nuts in exchange for 3 berries), then, by expressing demands as positive quantities and supplies as negative quantities, the exchange is shown as follows in Fig. 1.

### 1. A Market-Clearing Exchange of Nuts and Berries Between Two People

PERSON	NUTS $p \times q$	BERRIES $p \times q$	SUM	
A	$1 \ x + 6$	$2 \ x - 3$	0	Say's Principle
B	$1 \ x - 6$	$2 \ x + 3$	0	
SUM	0	0	0	Walras's Law (ex ante)


  
Market Clearing

To establish the commonly used terminology, we have used Say's Principle to mean that each row sums to zero; market clearing<sup>7</sup> to mean that each column sums to zero; and Walras's Law (*ex ante*)<sup>8</sup> to mean that the sum of the column totals (and, by necessity, the sum of the row totals) is zero.

It is, of course, unrealistic to assume that in a real economy the public would get together to determine market-clearing prices before trading.<sup>9</sup>

<sup>6</sup>This principle does not come from the writings of Say, but is a tool invented by Clower (1965, chap. 5).

<sup>7</sup>Market clearing means that the quantity demanded is equal to the quantity supplied. We do not say that the market is in equilibrium (though it could be), as this would imply too much. Although not relevant in this simple exchange, equilibrium in a complete market economy implies a long-run condition where producers are earning normal profit and there is no incentive for firms either to enter or leave the various industries.

<sup>8</sup>Walras's Law is a term invented by Lange (1942, p. 50). I have, however, designated the law as being "*ex ante*" as it relates to people's intentions only. This concept has also been called "aggregate Say's Principle." See, for example, Edwards (1985, pp. 124-40; 1991).

<sup>9</sup>Such a procedure is referred to as operating with "a Walrasian auctioneer."

Although *tâtonnement* (“groping by trial and error”—implying here a groping towards a market-clearing price<sup>10</sup>) might be expected, even then, people trade at the prices stated in the marketplace in accordance with their own subjective evaluation as to whether they would gain from the trade, regardless of whether these prices would clear the market.<sup>11</sup> Even though people (who are neither thieves nor philanthropists) would still plan their exchanges in accordance with Say’s Principle (that is, each individual’s supplies and demands will be equal in “nut value”), markets do not necessarily clear. Our participants could *intend* to trade in accordance with Fig. 2, but clearly these exchanges could not be accomplished because the total intended quantities supplied and demanded in each market are not equal.

## 2. Nonmarket-Clearing Intentions of Two People To Exchange Nuts and Berries

PERSON	NUTS $p \times q$	BERRIES $p \times q$	SUM	
A	$1x + 6$	$2x - 3$	0	Say's Principle
B	$1x - 8$	$2x + 4$	0	
SUM	-2	+2	0	Walras's Law (ex ante)

↑  
Excess  
Supply

↑  
Excess  
Demand

In this chart, each row sums to zero, so Say’s Principle still holds (by the assumption that only market trades are allowed); the columns do not sum to zero, so individual market clearing does not hold; but Walras’s Law (*ex ante*) still holds because the row totals and the column totals still sum to zero.

### INCREASING THE NUMBER OF MARKETS AND THE NUMBER OF PARTICIPANTS

Obviously, no matter how many people or markets are involved, so long as each person’s intentions are in accordance with Say’s Principle, Walras’s Law

<sup>10</sup>Léon Walras’s general equilibrium terminology—in the original French—is traditionally used in this discussion.

<sup>11</sup>Even though it is probably the case that a great deal of trading takes place at prices other than the market-clearing prices, the phenomenon is referred to as “false trading.” See, for example, Hicks (1961, p. 128).

(*ex ante*) always holds, and any excess demands are matched by equally valued excess supplies in other markets. Fig. 3 extends the concept to three (or more) people's nonmarket-clearing intentions to exchange nuts, berries, and fruit.

### 3. Nonmarket-Clearing Intentions of Three (or More) People To Exchange Nuts, Berries, and Fruit

Relative prices are: nuts = 1; berries = 2; fruit = 1/2

PERSON	NUTS $p \times q$	BERRIES $p \times q$	FRUIT $p \times q$	...	SUM	
A	$1 \times +6$	$2 \times -6$	$\frac{1}{2} \times +12$	...	0	Say's Principle
B	$1 \times -4$	$2 \times +4$	$\frac{1}{2} \times -8$	...	0	
C	$1 \times +5$	$2 \times -6$	$\frac{1}{2} \times +14$	...	0	
:	:	:	:	:	:	
SUM	+7	-16	+9	...	0	Walras's Law ( <i>ex ante</i> )

↑  
Excess  
Demand

↑  
Excess  
Supply

↑  
Excess  
Demand

The framework of trade between any number of traders and any number of markets can be used to represent the actions of both consumers and producers. The table presents individuals (*A*, *B*, *C*, etc.) supplying and demanding goods (nuts, berries, fruit, etc.), but an individual may be thought of as a consumer supplying factor services and demanding final goods and services, and a producer may be thought of as demanding factor services and raw material inputs and supplying intermediate or final goods and services. However, no matter how many producers or consumers there are, it *must* be the case that if Say's Principle holds (that is, each row sums to zero), then the excess demands and excess supplies must sum to zero (that is, Walras's Law *ex ante* holds).

### BORROWING AND LENDING

A common feature of a market economy that has not as yet been included in our analysis is the existence of borrowing and lending, but this too may easily be added. Let us assume, as an example, that nuts (the numéraire) may be borrowed and lent. Those who wish to borrow will supply nut-denominated IOUs (promising to repay a stated quantity of nuts at a definite future date), and those who wish to lend nuts will demand these IOUs, paying for them at current market prices. If we assume that the IOUs are promises to pay 1 nut five years from now, then the market price of  $\frac{3}{4}$  of a nut will be equivalent to

an annual interest rate of roughly 6 percent.<sup>12</sup> Selling the nut IOUs then makes no difference to the basic framework we have used; it simply adds a market.

4. Nonmarket Clearing Intentions of Three (or more)  
People To Trade Nuts, Berries, and Fruit and to  
Borrow and Lend Nuts

PERSON	NUTS $p \times q$	NUT IOUs $p \times q$	BERRIES $p \times q$	FRUIT $p \times q$	...	SUM
A	$1x + 5$	$\frac{3}{4}x - 8$	$2x + 7$	$\frac{1}{2}x - 26$	...	0
B	$1x - 6$	$\frac{3}{4}x + 4$	$2x - 8$	$\frac{1}{2}x + 38$	...	0
C	$1x + 2$	$\frac{3}{4}x + 4$	$2x - 6$	$\frac{1}{2}x + 14$	...	0
:	:	:	:	:	:	:
SUM	+1	0	-14	+13	...	0

$\uparrow$                        $\uparrow$                        $\uparrow$                        $\uparrow$   
 Excess              Market              Excess              Excess  
 Demand              Clearing              Supply              Demand

← Say's Principle  
 ← Walras's Law (ex ante)

The nut IOU market is here represented as clearing—not an unrealistic situation if we think of the IOU market being run by dealers who stand ready to buy and sell the IOUs from their own portfolios—but it doesn't have to clear. Obviously, there can be unsatisfied borrowers and unsatisfied lenders in the market, just as there can be unsatisfied suppliers and demanders of any other good.

#### EXTENSION TO THE MACROECONOMY

Many traditional macroeconomic models consist of just four markets—output, factors, bonds, and money—and these may be substituted for the four markets we have used. If we think of nuts as money, then nut IOUs become bonds, berries may then be thought of as factor services, and fruit as all other goods and services. The only difference is that these four markets represent the whole economy, so there cannot be more markets. In switching to a whole economy in the real-world sense, it would also make sense to designate the participants in some way other than as “persons,” as many transactions are carried out by institutions or by collective groups like businesses or households. We will, therefore, now consider the various participants to be unspecified “agents”:

<sup>12</sup>Actually, a little over 5.92 percent.

### 5. Nonmarket-Clearing Intentions of All Agents To Trade, Borrow, and Lend

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM	
A	$1x + 5$	$\frac{3}{4}x - 8$	$2x + 7$	$\frac{1}{2}x - 26$	0	← Say's Principle
B	$1x - 6$	$\frac{3}{4}x + 4$	$2x - 8$	$\frac{1}{2}x + 38$	0	
C	$1x + 2$	$\frac{3}{4}x + 4$	$2x - 6$	$\frac{1}{2}x + 14$	0	
:	:	:	:	:	:	
SUM	+1	0	-14	+13	0	← Walras's Law (ex ante)

↑                      ↑                      ↑                      ↑  
 Excess      Market      Excess      Excess  
 Demand      Clearing      Supply      Demand

This is the market framework originally envisaged by Oskar Lange (1942),<sup>13</sup> in which he supported Keynes's contentions concerning the neoclassical economists' interpretation of Say's Law. He did this by discussing the difference between what he called "Say's Identity" and what later came to be known as "Say's Equality."<sup>14</sup>

#### *Say's Identity*

What Lange called "Say's Identity" was a specification of what Keynes considered to be the obviously false Say's Law. What Keynes thought that the classical (read neoclassical) economists were doing was specifying Walras's Law *ex ante* for a barter economy, and then adding the money market later as an intended explanation of where the general price level came from. In the *General Theory*, Keynes (1936, chap. 2) had accused them quite specifically of making this error, offering as "proof" his now famous misquotation of John Stuart Mill.

A specification of Walras's Law *ex ante* for a barter economy states that any excess demand will be matched by an excess supply, and vice versa.

### 6. A Barter Economy (goods, services, and bonds, but no money)<sup>15</sup>

AGENT	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM
A	$\frac{3}{4}x - 8$	$2x + 7$	$\frac{1}{2}x - 16$	0
B	$\frac{3}{4}x + 4$	$2x - 8$	$\frac{1}{2}x + 26$	0
C	$\frac{3}{4}x + 4$	$2x - 6$	$\frac{1}{2}x + 18$	0
:	:	:	:	:
SUM	0	-14	+14	0

↑                      ↑                      ↑                      ↑  
 Market      Excess      Excess      Walras's Law for  
 Clearing      Supply      Demand      a Barter Economy


<sup>13</sup>Where we have set Lange's  $n$  markets equal to four.


<sup>14</sup>So named by Becker and Baumol (1952, p. 360).


<sup>15</sup>The existence of bonds in a barter economy would mean that the bonds were promises to pay goods or services in the future.


However, if we specify that this situation exists *within a money economy*, then we have a serious problem in explaining how a money economy works. If Walras's Law *ex ante* applies to the money economy (which it does by the assumption of Say's Principle) as well as to the barter economy within it, then it is *necessarily the case* that individuals cannot change their money balances under any conditions—the excess demands and excess supplies of money must be identically equal to zero.


AGENT	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM FOR BARTER ECONOMY	MONEY $p \times q$	SUM FOR MONEY ECONOMY
A	$\frac{3}{4}x - 8$	$2x + 7$	$\frac{1}{2}x - 16$	0	$1 \times 0$	0
B	$\frac{3}{4}x + 4$	$2x - 8$	$\frac{1}{2}x + 26$	0	$1 \times 0$	0
C	$\frac{3}{4}x + 4$	$2x - 6$	$\frac{1}{2}x + 18$	0	$1 \times 0$	0
:	:	:	:	:	:	:
SUM	0	-14	+14	0	0	0


  
 Market  
Clearing

  
 Excess  
Supply

  
 Excess  
Demand


  
 Say's  
Identity

  
 Requirements  
for Say's  
Identity to  
Exist

  
 Walras's Law  
for a Money  
Economy

For Say's Identity to exist within a money economy that conforms to Walras's Law *ex ante* requires the excess demands for money to be identically equal to zero. That this is untenable can easily be shown by considering a simple exchange of berries and fruit between two people at market-clearing prices. Let the price of berries be 2 units of money, and the price of fruit be half a unit of money. If A and B exchange 6 berries for 24 fruit, then neither A nor B would need to change money balances:

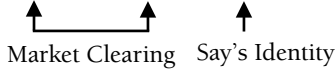
PERSON	MONEY $p \times q$	BERRIES $p \times q$	FRUIT $p \times q$	SUM
A	$1 \times 0$	$2x - 6$	$\frac{1}{2}x + 24$	0
B	$1 \times 0$	$2x + 6$	$\frac{1}{2}x - 24$	0
SUM	0	0	0	0

  
 Market Clearing

However, if we consider the berry and fruit markets without any reference to the money (that is, we look at the exchange as though it were a barter exchange), the money prices (2 and  $\frac{1}{2}$ ) are no longer linked to the money supply. The demands and supplies are related to the *relative prices* only:

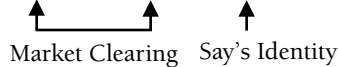


PERSON	BERRIES $p \times q$	FRUIT $p \times q$	SUM
A	$2x - 6$	$\frac{1}{2}x + 24$	0
B	$2x + 6$	$\frac{1}{2}x - 24$	0
SUM	0	0	0



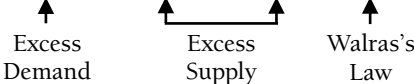
If we double the money prices to 4 and 1 respectively, the relative prices (and, hence, the demands and supplies) are unchanged:

PERSON	BERRIES $p \times q$	FRUIT $p \times q$	SUM
A	$4x - 6$	$1x + 24$	0
B	$4x + 6$	$1x - 24$	0
SUM	0	0	0



In such a situation, the *price level* is arbitrary, and if the money prices are changed, there is no market mechanism to return them to where they were before. In a money economy, however, this is not the case. If we double the prices (as above), then money balances will be cut in half. To replenish these balances to their former *real* level would require an excess demand for money balances—and, by Walras's Law, an excess demand for money requires an excess supply of all other goods:

PERSON	MONEY $p \times q$	BERRIES $p \times q$	FRUIT $p \times q$	SUM
A	$1x + 6$	$4x - 7$	$1x + 22$	0
B	$1x + 5$	$4x + 5$	$1x - 25$	0
SUM	+ 11	- 8	- 3	0



The excess supplies in the markets for berries and fruit would then reduce the money prices back to where they were originally. As Patinkin (1965, pp. 193-95 and 272-73) pointed out, Say's Identity would mean that absolute money prices were indeterminate, and it would deny all versions of the quantity theory of money.

### Say's Equality

If we include money as well as the goods and services in the specification of Walras's Law, then what later came to be referred to as "Say's Equality" can be seen as a simple "if and only if statement" derived from that law: The excess supplies and demands of all markets other than money (the  $n - 1$  markets) will exactly offset each other *if and only if* the money market (the  $n$ th market) clears.

#### 7. Say's Equality: The Money Market (the $n$ th) Clearing in the Framework of Walras's Law (*ex ante*)

AGENT	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM		MONEY $p \times q$	
A	$\frac{3}{4}x - 8$	$2x + 7$	$\frac{1}{2}x - 26$	-5		$1x + 5$	
B	$\frac{3}{4}x + 4$	$2x - 8$	$\frac{1}{2}x + 38$	+6		$1x - 6$	
C	$\frac{3}{4}x + 4$	$2x - 6$	$\frac{1}{2}x + 16$	-1		$1x + 1$	
:	:	:	:	:		:	
SUM	0	-14	+14	0	iff	0	← Say's Equality

↑ "n-1" Market Clearing      ↑ "nth" Market Clearing

Say's Equality has important corollaries. First, it clarifies the place that money has in the economy, showing how money-supply increases lead to general price increases. In the neo-Walrasian framework we have so far adopted, any increase in the general price level of goods and services could only be caused by an excess demand for those goods and services. Say's Equality shows how an excess supply of money will be matched by an equally valued excess demand in the remaining  $n - 1$  markets.

#### 8. Say's Equality with Excess Supply in the Money Market

AGENT	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM		MONEY $p \times q$	
A	$\frac{3}{4}x - 8$	$2x + 7$	$\frac{1}{2}x - 26$	-5		$1x + 5$	
B	$\frac{3}{4}x + 4$	$2x - 8$	$\frac{1}{2}x + 42$	+8		$1x - 8$	
C	$\frac{3}{4}x + 4$	$2x - 6$	$\frac{1}{2}x + 16$	-1		$1x + 1$	
:	:	:	:	:		:	
SUM	0	-14	+16	+2	iff	-2	← Say's Equality

↑ Excess Demand in the "n-1" markets (other than money)      ↑ Excess Supply of Money

This example has an excess supply of money that arises from the fact that *B* chooses to take more money out of money balances than *A* and *C* choose to add to theirs, but it is important to our understanding of monetary policy that we see money supply increases emanating from the banking system. First, a central bank that can carry out open market operations creates money that can then be used to purchase bonds in the open market. These additions to monetary base are then used by the depository institutions to make loans and create further money (that is, purchase money IOUs) as the so-called multiple expansion of deposits. As far as our framework is concerned, money is created and put into circulation by the banking system's purchase of bonds. Any increase in the money supply (whether the result of the central bank's open market operations, or the banking system's multiple expansion of deposits) will be matched by an equal increase in the demand for bonds. The newly created money is then added to the money supply (as an excess supply of money), which causes there to be an excess demand for goods and services (in addition to any excess demand that might already exist), and hence puts an upward pressure on the general price level.

#### 9. The Addition of Money Creation by the Banking System

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM	
A	$1 \times +5$	$\frac{3}{4} \times -8$	$2 \times +7$	$\frac{1}{2} \times -26$	0	<div> <div>Say's Principle</div> <div>←</div> </div>
B	$1 \times -6$	$\frac{3}{4} \times 0$	$2 \times -8$	$\frac{1}{2} \times +44$	0	
C	$1 \times +2$	$\frac{3}{4} \times 0$	$2 \times -6$	$\frac{1}{2} \times +20$	0	
⋮	⋮	⋮	⋮	⋮	⋮	
Banking System	$1 \times -6$	$\frac{3}{4} \times +8$			0	<div> <div>Walras's Law (ex ante)</div> <div>←</div> </div>
SUM	-5	0	-14	+19	0	

↑  
Excess  
Supply

↑  
Market  
Clearing

↑  
Excess  
Supply

↑  
Excess  
Demand

Apart from Lange's deductions about money, it is probably at least as important to point out that Say's Equality also gives the lie to an important Keynesian assertion: that unemployment of factor services is caused by deficient demand for goods and services.<sup>16</sup> If the money market and the bond markets are priced to clear (as in case 6 above), then unemployment of factor services must always be accompanied by an excess demand for goods and

<sup>16</sup>Keynes wrote exclusively of the unemployment of labor, but in our framework it applies equally to the unemployment of any factor service.

services. Conversely, deficient demand for goods and services (that is, excess supply) will, in the absence of excess demands or excess supplies in the money or bond markets, cause there to be an excess *demand* for factor services. Lange (1942, p. 61) recognized that this point had been covered quite explicitly in the discussions between Ricardo and Malthus, and pointed out that Malthus's notion of an excess supply of goods and services being accompanied by an excess supply of factor services merely requires a sufficient excess demand for money in order to be valid.

Faced with the very same problem with Keynes's *General Theory*, Lange, rather strangely, does not use the same rationalization. The same argument could easily have been used: The Keynesian "liquidity trap" is usually explained as an *infinite* demand for money, which would clearly be adequate to cover all conceivable combinations of excess demands and supplies in the other ( $n - 1$ ) markets—including, of course, the case of an excess supply in both the market for goods and services and the market for factor services. Lange, however, creates a special case for Keynesian theory:

The excess supply of . . . (factor services) . . . is, however, not the same as "involuntary unemployment" in the Keynesian sense. "Involuntary unemployment," as defined in the Keynesian theory, is not an excess of supply of labor but *an equilibrium position* obtained by the intersection of a demand and of a supply curve, the supply curve, however, being infinitely elastic with respect to money wages over a wide range. (Lange 1942, p. 61n., italics in original)

This "explanation" is, however, no explanation at all. If the labor market is said to be "in equilibrium" when there is "involuntary unemployment," then presumably the other markets could be in equilibrium, too, and the idea of unemployment being caused by deficient demand for goods and services disappears. Even if we used the explanation Lange used for Malthus and included Keynes's strange liquidity-trap notion, the unemployment of factor services is no longer *caused* by the deficient demand for goods and services: the unemployment *and* the deficient demand for goods and services are both caused by the excess demand for money.

#### MONETARY THEORY AND POLICY AFTER LANGE

Before Lange, the meaning of Say's Law for monetary theory and policy could hardly be debated because of the obvious confusion regarding the exact meaning of the law. Many were prepared to accept that what we have called Walras's Law *ex ante* was that law. Others believed that Say's Principle was Say's Law. Following Keynes, Lange himself (and Patinkin after him), claimed that Say's Identity was what the neoclassical economists meant by Say's Law. Lange's analysis, therefore, clearly brought order to the debate, and contributed greatly to the discussion of (neo)classical monetary theory and policy,

even though it may well have diverted attention from the message that Say himself had intended to convey. Becker and Baumol (1952), attempted to demonstrate that the classical and neoclassical economists from the very early days had believed that monetary theory was based on Say's Equality, but whether or not they were correct, it is certainly the case that those neoclassical economists who came *after* Lange adopted Say's Equality as their own.

In matters of theory, the modern neoclassical economists centered their investigations on Walras's Law and the conditions under which the economy "tends" toward full employment. In matters of monetary policy, their discussions centered on the light that Say's Equality could shed on the consequences of money-supply changes. Neoclassical replies to Keynes and the Keynesians consisted, not of denying Keynes's characterization of their position, but simply in denying that they had reached their conclusions based on what Lange had called "Say's Identity."

The view that under conditions of flexible wages and prices and no frictional unemployment, the economy would tend to move toward full employment can easily be explained using Walras's Law *ex ante*. Take, for example, our statement of Walras's Law *ex ante* in Fig. 5 from above.

##### 5. Nonmarket Clearing Intentions of All Agents to Trade, Borrow, and Lend

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM	
A	$1 \ x + 5$	$\frac{3}{4} \ x - 8$	$2 \ x + 7$	$\frac{1}{2} \ x - 26$	0	Say's Principle
B	$1 \ x - 6$	$\frac{3}{4} \ x + 4$	$2 \ x - 8$	$\frac{1}{2} \ x + 38$	0	
C	$1 \ x + 2$	$\frac{3}{4} \ x + 4$	$2 \ x - 6$	$\frac{1}{2} \ x + 14$	0	
:	:	:	:	:	:	
SUM	+ 1	0	- 14	+ 13	0	Walras's Law ( <i>ex ante</i> )
	↑ Excess Demand	↑ Market Clearing	↑ Excess Supply	↑ Excess Demand		

Here there is an excess supply of factor services (that is, there is unemployment), but this is matched by an excess demand for both goods and services and for money. If wages and prices are flexible, then the excess supply of factor services would cause wages (and the prices of other factor services) to fall, and the excess demand for goods and services would cause the general price level to rise. These price changes would eliminate the excess supplies and excess demands, and the economy would move to full employment.

Say's Equality may be used to explain the modern neoclassical economists' views on monetary policy, and their conclusions are not unlike those reached by Say himself. Say, who believed that money was neutral, simply considered that money-induced changes in the nominal interest rate would not

affect the real rate, and would therefore have no real effects on the economy. This is basically the neoclassical response to the Keynesian view. The Keynesians believe that if the economy has unemployed factor services, an increase in the money supply removes the unemployment simply by lowering the interest rate and inducing real investment in capital equipment. Based on the belief that this would increase aggregate demand, and that the increased demand would necessarily call forth an increased supply of goods and services, the Keynesians believed that the economy would be lifted out of the recession.

Modern neoclassical economists, on the other hand, use Say's Equality to show that the Keynesian story is invalid. Although open market operations can cause a temporary rise in the price of bonds (and a temporary fall in the interest rate), this will not necessarily change the level of unemployment at all, as it may not change the prices in the labor market. Assume that we start with Fig. 9 above, which shows a situation of unemployment in an economy where the money supply can be changed by the monetary system:

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM	
A	$1 \times +5$	$\frac{3}{4} \times -8$	$2 \times +7$	$\frac{1}{2} \times -26$	0	Say's Principle
B	$1 \times -6$	$\frac{3}{4} \times 0$	$2 \times -8$	$\frac{1}{2} \times +44$	0	
C	$1 \times +2$	$\frac{3}{4} \times 0$	$2 \times -6$	$\frac{1}{2} \times +20$	0	
:	:	:	:	:	:	
Banking System	$1 \times -6$	$\frac{3}{4} \times +8$			0	Walras's Law (ex ante)
SUM	-5	0	-14	+19	0	

↑  
Excess  
Supply

↑  
Market  
Clearing

↑  
Excess  
Supply

↑  
Excess  
Demand

If the Federal Reserve increases the money supply by an open market operation (that is, buys more bonds), this will increase the price of bonds and lower the interest rate. For instance, if the price of bonds rises from  $\frac{3}{4}$  to  $\frac{4}{5}$ . For a five-year bond with a face value of 1, this will lower the rate of interest to approximately 4.57 percent. The increase in demand for bonds will cause the quantity of bonds supplied to increase, but Say's Principle makes clear that there is nothing to say that unemployment will be reduced. The purchase of bonds by the monetary authority and the banks will increase money balances, and this increase in the excess supply of money will cause an increase in the excess demand for goods and services—which will increase the pressure for the prices of goods and services to rise:

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM	
A	$1x + 5$	$\frac{4}{5}x - 10$	$2x + 7$	$\frac{1}{2}x - 22$	0	Say's Principle
B	$1x - 6$	$\frac{4}{5}x$	$2x - 8$	$\frac{1}{2}x + 44$	0	
C	$1x + 2$	$\frac{4}{5}x$	$2x - 6$	$\frac{1}{2}x + 20$	0	
:	:	:	:	:	:	
Banking System	$1x - 8$	$\frac{4}{5}x + 10$			0	
SUM	-7	0	-14	+21	0	Walras's Law (ex ante)

$\uparrow$  Excess Supply     $\uparrow$  Market Clearing     $\uparrow$  Excess Supply     $\uparrow$  Excess Demand

Whether or not there is *any* resulting change in employment depends on whether the changes in the prices of goods and services cause a change in real wages. This, of course, will depend on whether money wages change relative to the prices of goods and services, and has been the source of much debate about the effects of expectations in the economy.

Hayek, however, had shown the inadequacy of both the Keynesian view and the neoclassical response long before Keynes even wrote the *General Theory*,<sup>17</sup> but this too may be shown using the framework presented here. To explain the effects of a monetary increase (and a concomitant decrease in the nominal interest rate), it is necessary to disaggregate and separate the markets for capital goods from the markets for consumer goods and services. Let us assume that we start from the following, where agent *A* represents consumers, agent *B* represents the producers of consumer goods (who are the purchasers of capital goods), and agent *C* represents the producers of capital goods:

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	CONSUMER GOODS $p \times q$	CAPITAL GOODS $p \times q$	SUM	
A	$1x - 2$	$\frac{3}{4}x + 8$	$2x - 13$	$\frac{1}{2}x + 44$	$4x$	0	Say's Principle
B	$1x$	$\frac{3}{4}x - 4$	$2x + 10$	$\frac{1}{2}x - 42$	$4x + 1$	0	
C	$1x + 3$	$\frac{3}{4}x - 4$	$2x + 2$	$\frac{1}{2}x$	$4x - 1$	0	
:	:	:	:	:	:	:	
SUM	+1	0	-2	+1	0	0	Walras's Law (ex ante)

$\uparrow$  Excess Demand     $\uparrow$  Market Clearing     $\uparrow$  Excess Supply     $\uparrow$  Excess Demand     $\uparrow$  Market Clearing

<sup>17</sup>See Hayek (1978a) *Monetary Theory and the Trade Cycle*, originally submitted to the University of Vienna in 1929 as *Geldtheorie und Konjunkturtheorie* for his habilitation, also Hayek (1978b), *Prices and Production*, first published in London in 1931.

If we now assume that this state of affairs is disturbed by the banking system injecting money into the economy (by a combination of open market operations by the central bank and the multiple expansion of deposits by the commercial banks), we can expect the other agents in the economy to react and the prices in the various markets to be affected. Barring any notion of an infinite demand for money balances by all agents, the higher money balances will cause changes in the agents' supplies and demands in the other markets. As we have seen, neoclassical theory would tell us that the supplies and demands would change in such a way as to cause inflation, but as Hayek explained, it is much more complicated than this.

This purchasing of bonds by the banking system will cause the price in the bond market to be bid up, and the nominal interest rate to be bid down, but this activity by the banking system obviously causes a change in the excess supplies and excess demands in markets other than those for bonds and money. The excess demands and the excess supplies are still equal in the aggregate (that is, Walras's Law *ex ante* still holds), and there is in our example an excess supply of money where there used to be an excess demand, but there are serious changes in the markets for factor services, consumer goods, and capital goods. The lower interest rates do, indeed, cause an increase in the demand for capital goods, but Say's Principle shows that the production of these capital goods bids resources away from the production of consumer goods. This may well bid up the prices of factor services and cause increases in the prices of the capital goods, but at the same time, it will cause the supplies of consumer goods to be reduced as the demand for them increases, thus increasing the excess demand for consumer goods and adding pressure for a rise in the prices of consumer goods.

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	CONSUMER GOODS $p \times q$	CAPITAL GOODS $p \times q$	SUM	
A	$1 \times 0$	$\frac{5}{6}x + 6$	$2\frac{1}{2}x - 16$	$\frac{5}{8}x + 56$	$5 \times 0$	0	← Say's Principle
B	$1 \times 0$	$\frac{5}{6}x - 6$	$2\frac{1}{2}x + 8$	$\frac{5}{8}x - 40$	$5 \times 2$	0	
C	$1 \times 0$	$\frac{5}{6}x - 6$	$2\frac{1}{2}x + 6$	$\frac{5}{8}x \quad 0$	$5 \times -2$	0	
⋮	⋮	⋮	⋮	⋮	⋮	⋮	
BANKS	$1 \times -5$	$\frac{5}{6}x + 6$					← Walras's Law ( <i>ex ante</i> )
SUM	-5	0	-5	+10	0	0	

↑  
Excess  
Supply

↑  
Market  
Clearing

↑  
Excess  
Supply

↑  
Excess  
Demand

↑  
Market  
Clearing

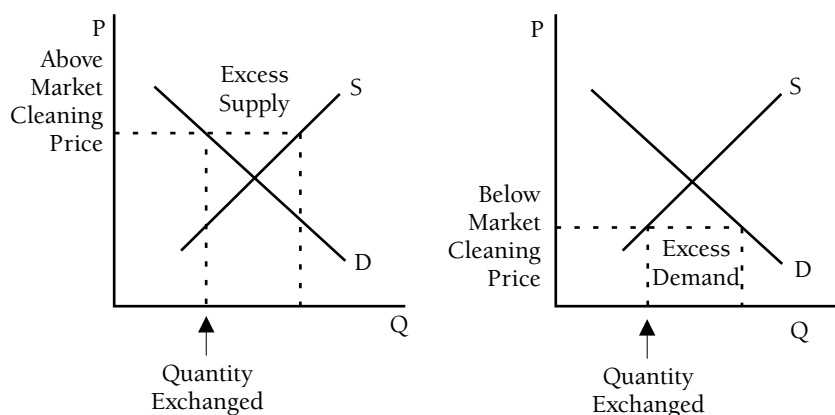
Clearly, if the price of factor services is bid up (as in our example), it is quite possible that unemployment is *increased* rather than decreased. At higher



wages, it would not be unreasonable to assume that agent *A* would increase the quantity of factor services supplied, while agents *B* and *C* would reduce the quantity demanded. Hayek's explanation, of course, goes on to explain how the misallocation of resources that results from the increase in investment in the face of reduced saving leads to the business cycle, but Say's Principle clearly plays a crucial role in the explanation of how this will occur.

#### CLOWER'S DUAL-DECISION HYPOTHESIS

An important change in the whole discussion came about with the publication of Clower's (1965, p. 287) dual-decision hypothesis. Clower pointed out that all the reasoning we have used so far relies on the use of people's *intentions* (that is, we are using Walras's Law *ex ante*), but intentions are not always realized in the marketplace, and this would cause the line of reasoning to break down. This can easily be seen from simple supply-and-demand diagrams. Obviously, if there are excess demands and excess supplies, some people simply cannot do what they intend to do. When prices are not market-clearing, what actually takes place is an exchange of the quantity supplied *or* the quantity demanded, *whichever is the lesser*. Excess supplies are quantities not sold, and excess demands are quantities not bought:



This means that we have a problem with interpreting both Say's Principle and Walras's Law. Say's Principle, as we have stated it, is an *ex ante* concept, meaning that only if supplies are sold will they finance the quantities demanded. *Ex post* the quantities demanded must be financed from the actual sales of supplies.

Using our simple exchange framework, let us take the simplest case of nonmarket-clearing as shown in Fig. 2 above.

PERSON	NUTS $p \times q$	BERRIES $p \times q$	SUM	
A	$1 \times +6$	$2 \times -3$	0	Say's Principle
B	$1 \times -8$	$2 \times +4$	0	
SUM	-2	+2	0	Walras's Law (ex ante)

↑                      ↑  
 Excess      Excess  
 Supply      Demand

Clearly, person *B* cannot sell 8 nuts in this market because *A* (the only other participant) is demanding just 6, and if *B* sells 6 nuts this will finance a demand of only 3 berries. *B*'s *intended* demand of 4 berries would cost 8 nuts, and *B* will only have 6. Clower's point was that once *B* finds out that only 6 nuts are sold, a new decision must be made about the demand for berries because the purchases are constrained by the sales. In this case, the demand for berries cannot exceed what can be paid for with 6 nuts (that is, only 3 berries can be bought). Clower's conclusion was therefore, that although Walras's Law may be true *ex ante*, it certainly could not be true *ex post* in any situation where there are excess demands and excess supplies. Thus, whatever Say's Law might be, if it is derived from Walras's Law holding *ex post*, it could not be valid.

Clower (1965, p. 290) offered his dual-decision hypothesis as an explanation of why there may not be a tendency for the economy to return to full employment, and quite explicitly as a theoretical basis for Keynes's *General Theory*. Unemployment caused by money wages that are too high (that is, above market clearing), will be removed automatically if the prices of goods and services rise. However, the prices of goods and services will only rise if there is excess demand for them. If, as in Clower's hypothesis, excess supplies for factor services are not matched by excess demands for goods and services, there is no force to move the economy in the direction of full employment. According to Leijonhufvud (1974, p. 167n.), Clower rejected his hypothesis almost as soon as he had written it, but it is still important as the starting point of the modern neoclassical defense of Say's Law as an equilibrating force. Our current understanding of what we might call the *dynamic* version of Say's Law (that is, the process whereby the economy returns to a full-employment equilibrium in an economy with flexible wages and prices) comes from the criticism of Clower's hypothesis.

#### *Edwards's Reply to Clower*

Edwards (1985) has pointed out that Clower's dual-decision hypothesis is based on a misunderstanding of how a money economy functions. The hypothesis is explained using the simplest possible disequilibrium situation in a barter economy, but our economy is a *money* economy, and the way in

which money is used is crucial to the outcome. Only in a barter economy do current demands for goods and services depend on current supplies of goods and services. In a money economy people keep money balances as a buffer stock that separates the act of supplying from the act of demanding. People's demands are made based on the amount of money balances they are holding, and the income from supplying factor services (for example, wages) are used to replenish the money balances. The proportion of money balances that people will intend to spend will depend on their expectation of being able to sell goods or services. If people earn more from their sales (of goods, services, or factors), than they spend on their purchases (of goods, services, or factors), then their money balances will increase. If people earn less from their sales (of goods, services, or factors) than they spend on their purchases (of goods, services, or factors) then their money balances will decrease. For the most part, we can expect that people hold money balances (of perhaps some specific real value) and then carry out their sales and purchases so as to maintain these money balances intact. This will mean that, in general, they intend neither to add to nor take from their money balances.

As an example, let us take the intended transactions of individual agents who are offering to buy and sell factor services, to borrow and lend money, and to buy and sell final goods and services, but who do not intend to change their money balances:

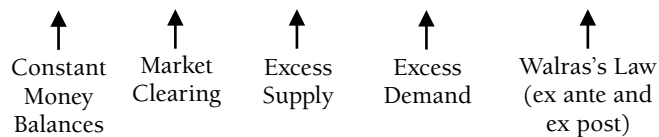
#### 10. Maintaining Constant Money Balances

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM	
A	$1 \times 0$	$\frac{3}{4}x - 8$	$2x + 8$	$\frac{1}{2}x - 20$	0	 Say's Principle
B	$1 \times 0$	$\frac{3}{4}x + 4$	$2x - 7$	$\frac{1}{2}x + 22$	0	
C	$1 \times 0$	$\frac{3}{4}x + 4$	$2x - 6$	$\frac{1}{2}x + 18$	0	
:	:	:	:	:	:	
SUM	0	0	-10	+10	0	 Walras's Law (ex ante)
	↑ Constant Money Balances	↑ Market Clearing	↑ Excess Supply	↑ Excess Demand		

Because we are talking about intentions, we have a statement of Walras's Law *ex ante*—the bond market is assumed to clear, so the excess supply in the factor markets is matched by an excess demand in the markets for goods and services. However, Clower maintained that these intentions cannot all be realized. *B*'s and *C*'s demands for goods, services, and bonds depend on their ability to sell their intended amounts of factor services, and they cannot do

this because *A* is prepared to buy less factor services than they are offering. Edwards's point is that if sales in the factor market are limited by the demand (that is, *B* and *C* can only sell a total of 16 money's worth of factor services), then *B* and *C*'s demands for goods and services will be partly financed by reductions in money balances. If we assume that *B* and *C* each sell 8 money's worth of factor services, then with the other market intentions staying the same, *B* must reduce money balances by 6, and *C* must reduce money balances by 4. The excess demand for goods and services (a money's worth of 10) is a real demand because *A* and *B* intend to finance that demand by reducing money balances instead of using the intended excess supply in the factor market. Although *B* and *C* *intend* to reduce their money balances to finance their demands for goods and services, the actual money balances are unchanged for the simple reason that this is an *excess demand* for goods and services that will not be realized. Edwards's explanation shows, therefore, that what we have characterized as Walras's Law *ex ante* applies *ex post* as well. This can be seen if we look, not simply at people's intentions, but at their actual exchanges and their unfulfilled desires to make exchanges separately.

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM OF ALL ACTUAL AND INTENDED TRANSACTIONS
<b>A's Exchanges</b>	<b>1 x 0</b>	<b><math>\frac{3}{4} x - 8</math></b>	<b>2 x + 8</b>	<b><math>\frac{1}{2} x - 20</math></b>	<b>0</b>
unfulfilled desires	1 x 0	$\frac{3}{4} x - 0$	2 x 0	$\frac{1}{2} x - 0$	0
<b>B's Exchanges</b>	<b>1 x 0</b>	<b><math>\frac{3}{4} x + 4</math></b>	<b>2 x - 4</b>	<b><math>\frac{1}{2} x + 10</math></b>	<b>0</b>
unfulfilled desires	1 x 0	$\frac{3}{4} x - 0$	2 x - 3	$\frac{1}{2} x + 12$	0
<b>C's Exchanges</b>	<b>1 x 0</b>	<b><math>\frac{3}{4} x + 4</math></b>	<b>2 x - 4</b>	<b><math>\frac{1}{2} x - 10</math></b>	<b>0</b>
unfulfilled desires	1 x 0	$\frac{3}{4} x - 0$	2 x - 2	$\frac{1}{2} x + 8$	0
:	:	:	:	:	:
Sum of all actual and intended transactions	0	0	- 10	+ 10	0



In this example, *A* is able to make all intended exchanges because wherever there is an excess supply, *A* is the demander, and wherever there is an excess demand, *A* is the supplier. *B* and *C*, on the other hand, cannot carry out all of their intentions. Let us assume, as an example, that of the 8 factor

services demanded (by *A*), *B* and *C* each supply 4, and of the 20 goods and services supplied (by *A*), *B* and *C* each purchase 10. This means: *B* has an unfulfilled desire to sell 3 units of factor services and has an unfulfilled desire to purchase 12 units of goods and services; and *C* has an unfulfilled desire to sell 2 units of factor services and an unfulfilled desire to purchase 8 units of goods and services.

The issue, for this interpretation of Say's Law, is: given that not all supplies and demands can be carried out, do the excess demands and the excess supplies (that would cause prices to move so that the economy moves toward full employment) still exist? Clower had stated that because *B*'s excess demand for goods and services could only be financed by *B*'s excess supply of factor services, and because *C*'s excess demand for goods and services could only be financed by *C*'s excess supply of factor services, the excess demand for goods and services would not exist; they would be "notional" demands. Edwards, on the other hand, points out that the excess demand is real. *B*'s desire to buy goods and services depends on *B*'s money balances, not on the sale of factor services. If *B* doesn't sell enough factor services to finance all of the purchases, then the remainder will come from money balances. In our example, *B* has an excess demand for goods and services (of 6 units of money's worth). *B* intends to buy these goods and services using 6 units of money that are currently being held in money balances. We do not, however, see a reduction in *B*'s money balances because *B* cannot actually buy the goods and services (it is an excess demand that is an *unfulfilled desire* to spend money balances). Similarly, *C* intends to buy 4 units of money's worth of goods and services in excess of what is actually purchased. *C*'s money balances are not in fact reduced, because the money is intended for use in buying what is in fact an excess demand that is not being fulfilled. Thus, the excess supplies of factor services still exist, because *B* and *C* would like to sell more units than *A* is demanding; and the excess demands for goods and services still exist, because *B* and *C* have money balances that would cover the purchases if they could in fact be made. The excess demands and excess supplies exist *ex post*, so the forces that would cause the economy to move toward full employment are still intact. To summarize, most neoclassical economists seem to take the position that, in the absence of wage and price rigidity and in the absence of frictional unemployment, Say's Law explains the tendency of the economy to move to full-employment equilibrium.

#### THE VIEWS OF WILLIAM H. HUTT

In the years of debate that centered on Lange's neo-Walrasian explanation, very few seem to have noticed that Say's Law *as enunciated by Say* was not being addressed. Say predates the Walrasian concern with general equilibrium, so it should not be surprising that he did not address that issue in his

writings. William Hutt seems to be virtually alone among the modern defenders of the law to state explicitly that Say's Law is not the oft quoted tendency for the economy to move to full-employment equilibrium under conditions of wage and price flexibility. In his explanation of the law, he criticizes all those who think that "Say's law is valid only as a long-term theorem; that it would hold under 'perfect price flexibility'; but that it is irrelevant to the price rigid world of reality" (Hutt 1974, p. 40). Hutt has shown quite clearly that what Say and the other early classical economists said could be explained without reference to any tendency of the economy to change over time. Say's Law, *per* Say himself, refers to the situation that exists *at a point in time*. Hutt saw Say's Law as an explanation of why depressions existed, not as an explanation of how they would automatically be removed if there was wage and price flexibility. Much can be said about what might happen in an economy on the way from unemployment to full employment, but *that* was not what was at issue in the law itself. Hutt states:

Say's Law does *not*, then, "assume full employment" or imply that full employment is achievable whatever pricing (valuing) policies are adopted. It does *not* imply that market pressures will always be allowed to bring about pricing for market-clearance. What it *does* imply is that market pressures *could*, if permitted, have this effect. (1978, p. 39, italics in original)

The difference between Hutt's view and that of the neoclassical economists can be seen very clearly from an example he used that is quite similar to our discussion of supplying fruit and nuts in the market place. Hutt discusses the sale of fruit from his garden:

When I sell fruit grown in my garden, what I receive and what the purchaser pays me are the same! *But what is equally true, and what illustrates Say's Law, is that I dispose of an identical value out of money's worth I receive from that sale* whatever I am destined to acquire in return for it; and what I acquire will be of identical value. This remains true (a) whether I invest in additional money, by simply retaining an additional money balance equal to the value of the fruit I sell, or (b) whether my consumption of goods and services increases by the value of my proceeds from the sale (or by something less than that), or (c) whether I invest the value of my sale in the replacement of goods and services being currently consumed, or (d) whether I do more than maintain the value of my assets intact and invest in additional non-money assets. (1978, p. 34, italics in original)

Hutt is here illustrating Say's Law (as it was originally stated by Say) using what we have called Say's Principle, except with one important difference: Hutt is talking about his *sales* and what he *does* with the proceeds, not about his intended *supplies* and what he *intends* to do with the proceeds if he is successful in the market place. As Hutt (p. 27) states, "Say's law directs attention to actual *transactions*"—a view that is easily substantiated in the writings of

Say.<sup>18</sup> To Hutt, therefore, Say's Principle as an *ex ante* concept is not useful in explaining Say's Law. It only has value as an *ex post* concept.

To illustrate Hutt's perspective, let us use an example with excess demands and excess supplies in all markets (Fig. 11):

### 11. A General Case of Excess Demands and Excess Supplies in All Markets

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM	
A	$1 \times + 8$	$\frac{3}{4} \times - 12$	$2 \times + 7$	$\frac{1}{2} \times - 26$	0	 Say's Principle
B	$1 \times - 6$	$\frac{3}{4} \times + 4$	$2 \times - 8$	$\frac{1}{2} \times + 38$	0	
C	$1 \times + 2$	$\frac{3}{4} \times + 4$	$2 \times - 6$	$\frac{1}{2} \times + 14$	0	
:	:	:	:	:	:	
SUM	+ 4	- 3	- 14	+ 13	0	 Walras's Law (ex ante)
	↑ Excess Demand	↑ Excess Supply	↑ Excess Supply	↑ Excess Demand		

We can then separate the actual exchanges from the unfulfilled desires to exchange:

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM OF ALL ACTUAL AND INTENDED TRANSACTIONS
<b>A's Exchanges</b>	<b><math>1 \times + 5</math></b>	<b><math>\frac{3}{4} \times - 8</math></b>	<b><math>2 \times + 7</math></b>	<b><math>\frac{1}{2} \times - 26</math></b>	<b>0</b>
unfulfilled desires	$1 \times + 3$	$\frac{3}{4} \times - 4$	$2 \times 0$	$\frac{1}{2} \times 0$	0
<b>B's Exchanges</b>	<b><math>1 \times - 6</math></b>	<b><math>\frac{3}{4} \times + 4</math></b>	<b><math>2 \times - 4</math></b>	<b><math>\frac{1}{2} \times + 22</math></b>	<b>0</b>
unfulfilled desires	$1 \times 0$	$\frac{3}{4} \times 0$	$2 \times - 4$	$\frac{1}{2} \times + 16$	0
<b>C's Exchanges</b>	<b><math>1 \times + 1</math></b>	<b><math>\frac{3}{4} \times + 4</math></b>	<b><math>2 \times - 3</math></b>	<b><math>\frac{1}{2} \times + 4</math></b>	<b>0</b>
unfulfilled desires	$1 \times + 1$	$\frac{3}{4} \times 0$	$2 \times - 3$	$\frac{1}{2} \times + 10$	0
:	:	:	:	:	:
Sum of all actual and intended transactions	+ 4	- 3	- 14	+ 13	0
	↑ Excess Demand	↑ Excess Supply	↑ Excess Supply	↑ Excess Demand	↑ Walras's Law (ex ante and ex post)

<sup>18</sup>Say often uses the word "vente," and this is often (rather confusingly) written in English translations as "vent," but, as any dictionary will state, it means "sale." See, for example, Princep's translation of Say (1853, bk. 1, chap. 15).

If we now look at the actual *exchanges* rather than people's intentions, we have Say's Law as explained by Hutt:

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM
A	$1 \times + 5$	$\frac{3}{4} \times - 8$	$2 \times + 7$	$\frac{1}{2} \times - 26$	0
B	$1 \times - 6$	$\frac{3}{4} \times + 4$	$2 \times - 4$	$\frac{1}{2} \times + 22$	0
C	$1 \times + 1$	$\frac{3}{4} \times + 4$	$2 \times - 3$	$\frac{1}{2} \times + 4$	0
:	:	:	:	:	:
SUM	0	0	0	0	0

Although this figure illustrates Say's Law, we should not think (following the procedure Lange followed in discussing the *ex ante* flows) that it is the sum of the rows (and, hence, the sum of the columns) being zero that constitutes the law. Hutt (1974, pp. 33–34) referred to this as simply “a sophisticated statement of the obvious.” Say's Law of Markets, on the other hand, is that each sale, at the moment of sale, becomes a source of demand for some competing thing elsewhere in the economy. The money's worth of the sales dictates the money's worth of the demands. Because *A* sells 6 money's worth of bonds and 13 money's worth of goods and services, he can demand 14 money's worth of factor services and add 5 money's worth to money balances. Because *B* sells 8 money's worth of factor services and takes 6 money's worth from money balances, he can demand 3 money's worth of bonds and 11 money's worth of goods and services. Because *C* sells 6 money's worth of factor services, he can demand 3 money's worth of bonds and 2 money's worth of goods and services and add 1 money's worth to money balances. What everyone sells constitutes demand for noncompeting goods. In the aggregate, therefore, the money's worth of sales must always be matched by that same money's worth of demand, and there do not appear to be any exceptions to this rule. The statement is true whether or not the economy is at full employment.

If there is unemployment in the market for labor (that is, there is an excess supply of labor), the static view of Say's Law explains that this is so because of wage rigidities, but these rigidities are not caused by deficient aggregate demand for goods and services (as the Keynesians hold), but are the result of the suppliers of labor not pricing their services to sell. As Hutt puts it:

The phrase “excess supply of labor” [is] . . . merely an indirect way of saying that some workers are “unemployable” *at the wage-rates for which they are holding out*. . . . [W]hat is usually called “unemployed labor” could be more realistically called “unsupplied labor”; and any labor which remains “unsupplied” represents, because it is over-priced, *a withheld potential contribution to the source of demands for non-competing outputs*. (1974, p. 79, italics in original)



## IMPLICATIONS FOR PHILANTHROPY, THEFT, AND FISCAL POLICY

Modern discussions of Walras's Law, Say's Equality, and Say's Principle have always been carried out with the caveat that all participants are "neither thieves nor philanthropists." Indeed, everything we have written so far has been based on this assumption. However, if we are to explain Say's Law as Say stated it, this caveat must be removed—Say explicitly included theft in his discussion. So far, we have only included *market* activities (supplies and demands, sales and purchases), but although "philanthropists making donations" and "thieves stealing" do not fit this description, it is not difficult to describe them using our previous scenario. Let us choose one of the participants from our previous examples (for example, agent *A* from Fig. 6 above):

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM
A	$1 \times +5$	$\frac{3}{4} \times -8$	$2 \times +7$	$\frac{1}{2} \times -26$	0

If we now assume that *A* is a philanthropist who wishes to donate money that would otherwise be added to his money balances (in this case, 5 units of money) to someone who spends that money on goods and services, we can see that Say's Principle does not apply to *A*'s actions alone, but to *A* and the recipient together:

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM
A	$1 \times 0$	$\frac{3}{4} \times -8$	$2 \times +7$	$\frac{1}{2} \times -26$	-5
Recipient	$1 \times 0$	$\frac{3}{4} \times 0$	$2 \times 0$	$\frac{1}{2} \times +10$	+5
Aggregate Say's Principle →					0

If a philanthropist and the recipient of the philanthropist's donation are both included in the aggregate economy, it makes no difference to the truth of Walras's Law. It can, of course, change the excess demands and excess supplies in the various markets, but the sum of all the markets will still be the same: (Fig. 6 with Agent *A* being a philanthropist):

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM
A	$1 \times 0$	$\frac{3}{4} \times -8$	$2 \times +7$	$\frac{1}{2} \times -26$	-5
RECIPIENT	$1 \times 0$	$\frac{3}{4} \times 0$	$2 \times 0$	$\frac{1}{2} \times +10$	+5
B	$1 \times -6$	$\frac{3}{4} \times +4$	$2 \times -8$	$\frac{1}{2} \times +38$	0
C	$1 \times +2$	$\frac{3}{4} \times +4$	$2 \times -6$	$\frac{1}{2} \times +14$	0
:	:	:	:	:	:
SUM	-4	0	-14	+18	0

↑                      ↑                      ↑                      ↑  
 Excess              Market              Excess              Excess  
 Supply              Clearing              Supply              Demand

← Walras's Law

Different though it may be in practice, there is no difference to the aggregate amounts if *A* is robbed of 5 units of money instead of donating 5 units of money. If a thief steals the money and spends it in the market for goods and services, the outcome is exactly the same (Fig. 6 with agent *A* being robbed and the money being spent by the thief):

AGENT	MONEY $p \times q$	BONDS $p \times q$	FACTOR SERVICES $p \times q$	GOODS & SERVICES $p \times q$	SUM
A	$1 \times 0$	$\frac{3}{4} \times -8$	$2 \times +7$	$\frac{1}{2} \times -26$	-5
THIEF	$1 \times 0$	$\frac{3}{4} \times 0$	$2 \times 0$	$\frac{1}{2} \times +10$	+5
B	$1 \times -6$	$\frac{3}{4} \times +4$	$2 \times -8$	$\frac{1}{2} \times +38$	0
C	$1 \times +2$	$\frac{3}{4} \times +4$	$2 \times -6$	$\frac{1}{2} \times +14$	0
:	:	:	:	:	:
SUM	-4	0	-14	+18	0

↑                      ↑                      ↑                      ↑  
 Excess              Market              Excess              Excess  
 Supply              Clearing              Supply              Demand

← Walras's Law

Obviously, the presence of thieves and philanthropists makes no difference to the overall outcome. The demands of the thieves and of the recipients of the philanthropists' gifts will change the excess demands and the excess supplies, but it will not affect the validity of Walras's Law, Say's Equality, or Say's Law (by either the neoclassical "tendency to full employment" explanation, or of Say and Hutt's static version). However, for Say, the most significant point is that a combination of thievery and philanthropy is an apt description of government fiscal policy. Say actually used his law as a way of attacking the involvement of government (and monarch) in the economy of France.

Fiscal policy means simply that the government steals the public's assets (taxes them), and then either spends the money itself (what is usually termed "government expenditure") or donates the funds to others (makes subsidies),

who then spend them. Clearly, the government may not make expenditures or donations unless someone has already supplied something of value to the market. The demands of the government or the recipients of government funds must always be matched by equally valued supplies. Even with government fiscal policy, it is still the supplies that “create” the demands, and fiscal policy may be seen as mere income redistribution that can have no effect on aggregate output or employment other than those caused by the misallocation of resources they impose on the economy.

Say was quite explicit on this point. In chapter six of his *Principles*, he states:

There has long been a prevalent notion, that the values paid by the community for the public service, return to it again in some shape or other; in the vulgar phrase, that what government and its agents receive, is refunded again by their expenditure. This is a gross fallacy; but one that has been productive of infinite mischief. . . . The value paid to the government by the tax-payer is given without equivalent or return; it is expended by the government in the purchase of personal service, of objects of consumption; in one word, of products of equivalent value, which are actually transferred. (1853, p. 413)

Perhaps even more graphic, however, was Say's attack on the statements made by Voltaire concerning the expenditures of Louis XIV:

When Voltaire tells us, speaking of the superb edifices of Louis XIV, that they were by no means burdensome to the nation, but served to circulate money in the community, he gives us decisive proof of the utter ignorance of the most celebrated French writers of his day upon these matters. He looked no further than the money employed on the occasion; and when the view is limited to that alone, the extreme prodigality exhibits no appearance of loss. . . . The vigilance of the historian should have traced the 167 millions of dollars expended on the chateau of Versailles alone, from the original production by the laborious efforts of the productive classes of the nation, to the first exchange into money, wherewith to pay the taxes, through the second exchange into building materials, painting, gilding, etc. to the ultimate consumption in that shape, for the personal gratification of the vanity of the monarch. The money acted as a mere means of facilitating the transfers of value in the course of the transaction; and the winding up of the account will show, a destruction of value to the amount of 167 million of dollars, balanced by the production of a palace, in need of constant repair, and of the splendid promenade of the gardens. (1853, p. 415)

In a footnote to his discussion, Say quotes a certain Dr. Hamilton who wrote a tract on *The National Debt of Great Britain*, who compared government fiscal policy to

the forcible entry of a robber into a merchant's house, who would take away his money, and tell him he did him no injury, for the money, or part

of it, would be employed in purchasing the commodities he dealt in, upon which he would receive a profit. (p. 413n.)

Say's Law as a condemnation of government fiscal policy survived at least through the classical period. John Stuart Mill, who learned it either from Say himself (he lived with the Say family for a time in his youth) or from his father (some actually attribute the law to James Mill rather than to his friend Say), expressed the law in the same way *and* condemned fiscal policy in the same way, even including an embellished rendition of Hamilton's story:

The utility of a large government expenditure, for the purpose of encouraging industry is no longer maintained. Taxes are not now esteemed to be "like the dews of heaven, which return again in prolific showers." It is no longer supposed that you benefit the producer by taking his money, provided you give it to him again in exchange for his goods. There is nothing which impresses a person of reflection with a stronger sense of the shallowness of the political reasonings of the last two centuries,<sup>19</sup> than the general reception so long given to a doctrine which, if it proves anything, proves that the more you take from the pockets of the people to spend on your own pleasures, the richer they grow; that the man who steals money out of a shop, provided he expends it all again at the same shop, is a benefactor to the tradesman he robs, and that the same operation, repeated sufficiently often, would make the tradesman's fortune. (J.S. Mill 1968, pp. 47-48)

#### REFERENCES

- Becker, Gary S., and William J. Baumol. 1952. "The Classical Monetary Theory: The Outcome of the Discussion." *Economica* (November).
- Clower, Robert. 1965. "The Keynesian Counterrevolution: A Theoretical Appraisal." In *The Theory of Interest Rates*. F.H. Hahn and F. Brechling, eds. New York: Macmillan.
- Edwards, James R. 1985. "Effective Demand Failure: Critique of an Anti-Monetary Theory." *South African Journal of Economics* 53:124-40
- . 1991. *Macroeconomics: Equilibrium and Disequilibrium Analysis*. New York, Macmillan.
- Hayek, Friedrich A. 1978a. *Monetary Theory and the Trade Cycle*. New York: Augustus M. Kelley.
- . [1931] 1978b. *Prices and Production*. New York: Augustus M. Kelley.
- Hicks, J.R. 1961. *Value and Capital*. Oxford: Clarendon Press.

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<sup>19</sup>This in 1874.

- Hutt, William H. 1974. *A Rehabilitation of Say's Law*. Athens: Ohio University Press.
- Keynes, John Maynard. 1936. *The General Theory of Employment, Interest and Money*. New York: Harcourt, Brace.
- Lange, Oskar, Francis McIntyre, and Theodore O. Yntema, eds. 1942. "Say's Law: A Restatement and Criticism." In *Studies in Mathematical Economics and Econometrics*. Chicago: University of Chicago Press.
- Leijonhufvud, Axel. 1974. "Keynes' Employment Function." *History of Political Economy* 6 (Summer).
- Malthus, Robert. 1951. *Principles of Political Economy*. New York: Augustus M. Kelley.
- Mill, James. [1808] 1965. *Commerce Defended*. New York: Augustus M. Kelley.
- Mill, John Stuart. 1880. *Principles of Political Economy*. London: Longmans, Green.
- . [1874] 1968. *Essays on Some Unsettled Questions of Political Economy*. New York: Augustus M. Kelley.
- Patinkin, Don. 1948. "Relative Prices, Say's Law, and the Demand for Money." *Econometrica* 16.
- . 1949. "The Indeterminacy of Absolute Prices in Classical Monetary Theory." *Econometrica* 17.
- . 1951. "The Invalidity of Classical Monetary Theory." *Econometrica* 19.
- . 1965. *Money, Interest and Prices*. 2nd ed. New York: Harper and Row.
- Ricardo, David. 1957. *The Principles of Political Economy and Taxation*. New York: E.P. Dutton.
- Say, Jean-Baptiste. 1853. *A Treatise on Political Economy*. C.R. Princep, trans. 6th ed. Philadelphia: Lippincott, Gambo.