

## **The Natural Price Theory: Empirical Evidences of the Purchasing Power Parity and the Long Term Stock Market Function**

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*Natural price theory* suggests that the prices of all markets of the nations are interconnected. If this is correct, then the world exchange rate market and the world stock market should reflect the fact that they constitute an organised system of rational markets with a precise and demonstrable relationship between each other.

### **Introduction to the Natural Price Theory and Macroeconomic Model**

The natural price theory suggests that every good or service may have two distinct values. One visible, which would be the market price and the other, which is permanently hidden, would be the natural value (or natural price). The difference between the natural price and the market price of every good and service would be inflation, which would imply a generalisation of the Fisher effect in the economy or, in other words, defining this effect in terms of the proposed hypothesis: *any market price existing in the economy is composed of its natural value plus a certain level of inflation*. It would seem that, to date, the generalisation of the Fisher effect has not been proposed in the terms described, and much less as a fundamental part of a macroeconomic model, thus, this effect will be termed *universal Fisher effect*.

The central principle of the natural price theory and model is that the natural value of every good and service is derived from the quantity and grade of productive capacities and skills incorporated by unit of time or, in other words, from the labour deployed in its production. The above gives a new perspective on the theory known as the labour value theory.

The changes in the natural prices will occur in line with modifications in the labour standard of value or indeed with modifications in the quantity and grade of the existing human productive capacities and skills. On the other hand, the labour value of every productive activity, and therefore, the natural prices, is supposedly fixed in terms relative to the other existing capacities and skills, so that, as suggested by Leon Walras, in a different theoretical context, all prices in the economy are interconnected.

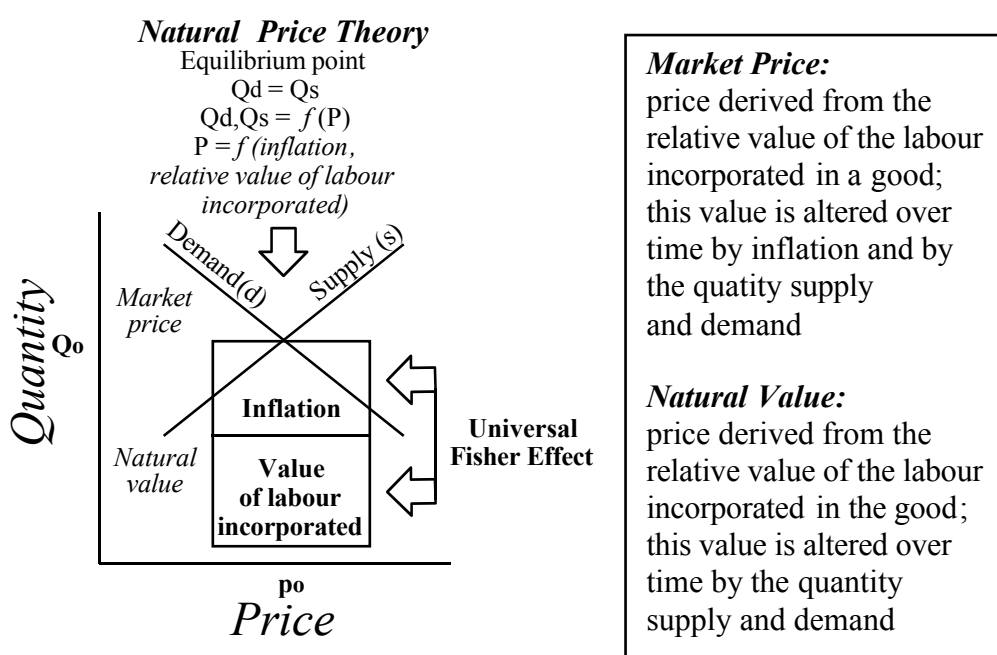
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At present, Alfred Marshall's law of markets is the undisputed paradigm of Economic Science. Contrary to one of the basic principles of Marshall's law of markets, natural price theory, convinced of the existence of a natural or original value in each and every good or service in the economy -a value derived from the hidden but real functioning of the labour value standard- suggests that: the quantity supplied and demanded of good or service will tend to adjust to the natural value of every good or service.

$$\begin{aligned} Q_{dx} &= f(p_x) \Rightarrow p_x = f(V_{tx}) \\ Q_{sx} &= f(p_x) \Rightarrow p_x = f(V_{tx}) \end{aligned}$$

$V_t$  = value of labour deployed in its production



As may have been observed, the natural price theory combines three important price theories from economic history: the labour value theory, Marshall's law of markets and the Fisher effect. The combination of these three theories arises as a result of empirical demonstrations where the central doctrinal antecedent is Adam Smith in his book *The Wealth of Nations*. All prices in the economy would perform and vary over time in accordance with this theory, except the labour market and the price of money.

How does the natural price theory differ from Marshall's law of markets?. The natural price theory confirms, for every good and service, the existence of: the supply function, the demand function and the sensitive relationship existing between these functions and the price of the good or service. However, in addition, the natural price theory proposes that the interplay between supply, demand and price, is just one of the three parts of the mechanism that would seem to be capable of explaining the functioning of economics as a whole.

The natural price theory tackles the problem of the functioning of any market using an approach different to Marshall's law of markets. While accepting the existence of

supply, demand and price for any market (good or service), as well as the possible interrelationships of one market with another by reason of the existence of complementary and substitutive products or services or as a consequence of the income effect, *the natural price theory views all these relationships as transitory or circumstantial, when the effects are considered in the short term.*

The suggested validity of the labour standard value in the economy, a standard which is highly stable over time, would imply that all market prices undergo continuous corrections towards their true natural or intrinsic value, the value derived from the hidden but real functioning of the labour standard. This frenetic activity of market prices in the pursuit for their true natural value would correct, over time, the transitory or short term alterations that may have transpired. The above, if correct, means that *all macroeconomic variables from the long-term perspective should exhibit completely rational economic behaviour over time, a behaviour subject to the principles of the functioning of the labour standard value, and this should be empirically demonstrable.*

Finally, while the universal Fisher effect is important as a means of explaining the variation in prices over time, *its real importance is this effect in relative terms among the nations* (distinct monetary standards) given the supposed validity of the labour standard of value. The universal Fisher effect in relative terms among the nations leads to the *national inflation differential*. The means for calculating the *national inflation differential* (NID) of one nation as against the other interconnected nations may be formulated by means of the following equation, (as index = IDI)

$$\text{NID} = \left[ \sum_{i=1}^n (\pi y_i - \pi x) \times (\text{EMy}_i / \text{EMx}) \right]$$

$\pi y$  = Inflation of foreign country (y)

$\pi x$  = National inflation (x)

$\text{EMy}$  = Exports to foreign country (y)

$\text{EMx}$  = Total national exports (x)

### **Empirical Evidences of the Purchasing Power Parity and the Long Term Stock Market Function**

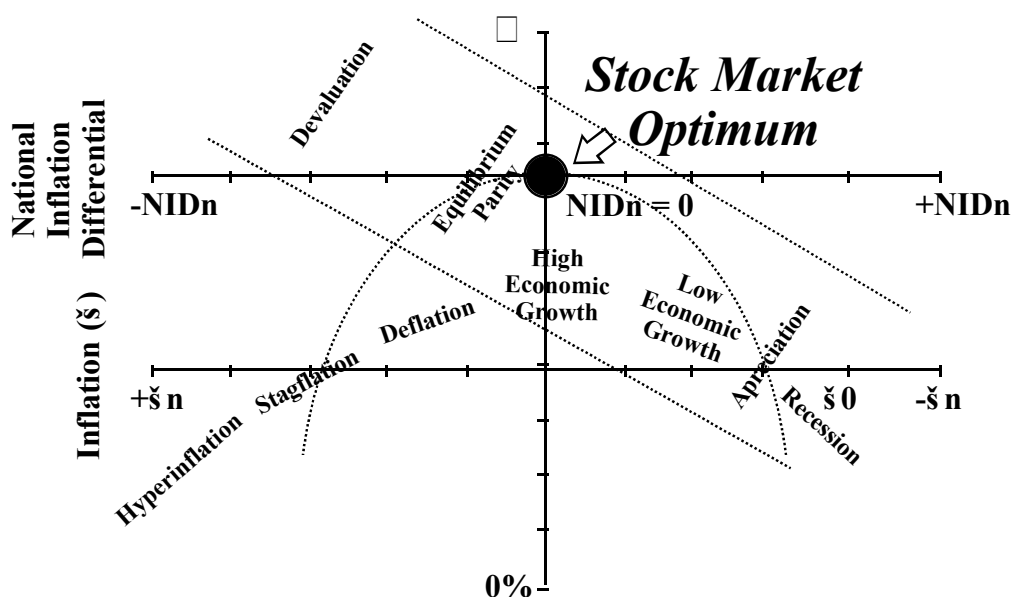
Natural price theory suggests that the prices of all goods and all services (markets) of the nations are interconnected through the labour standard of value, except the price of money. If this is correct, then the exchange rate market and the stock market should reflect the fact that they constitutes an organised system of rational markets with a precise and demonstrable relationship between each other.

*Functional relationship between the exchange rate market and national inflation differential, from the long-term perspective.* Significant direct empirical evidence was found which showed a relationship between the variation in the exchange rates over time and the variation, over time, of national inflation differential. The empirical proofs show that when the national inflation differential is zero then the exchange rate

of each nation tends to its equilibrium parity. If the national inflation differential is negative then the currency devalues, if the national inflation differential is positive then the exchange rate increases in value (ap. Thus, it may be asserted that an *optimum equilibrium parity exists for each nation, a parity that is determined by the national inflation differential*. Furthermore, verifying the existence of an optimum exchange rate, the empirical proofs show that the balance of trade tends to equilibrium as the inflation differential approaches zero.

*Functional relationship between the stock market index and national inflation differential, from the long term perspective.* Empirical proof was found that confirms the direct relationship between the variation in the stock market indices over time and the variation, over time, of the national inflation differential. *The world stock market as a whole describes a behaviour that is rational which may be described by a parabolic function with a nominal and real stock market optimum value of an intemporal nature.* The parabolic function appears to explain and demonstrate the existence and evolution of stock market cycles over time. The empirical results obtained refute the efficient market theory.

The diagram below seeks to summarise the relationship of the exchange rate and stock market: with inflation, the national inflation differential, and economic growth, from the perspective of the natural theory and macroeconomic model. Like any graphic representation, it is an abstraction which endeavours to present the above in a didactic manner.



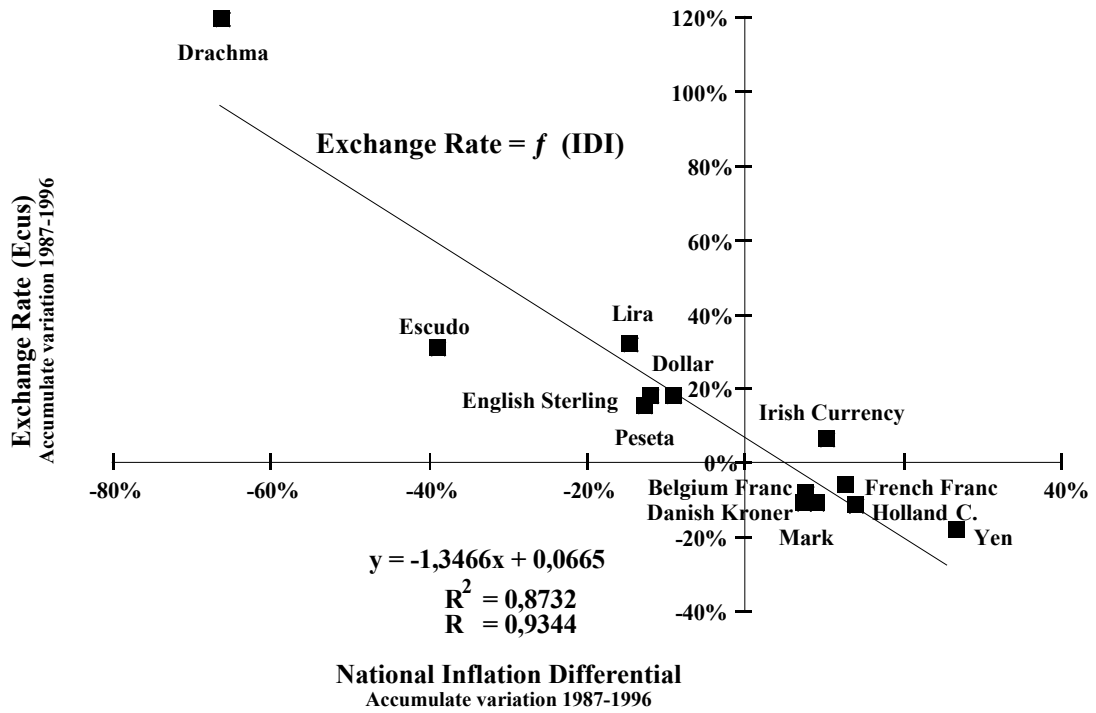
**Stock Market Index Growth (n)  
(Nominal and Real)**

National Inflation Differential (NID) = 0  
National Inflation Differential Index (IDI) = 1  
*Stock Market Optimum*

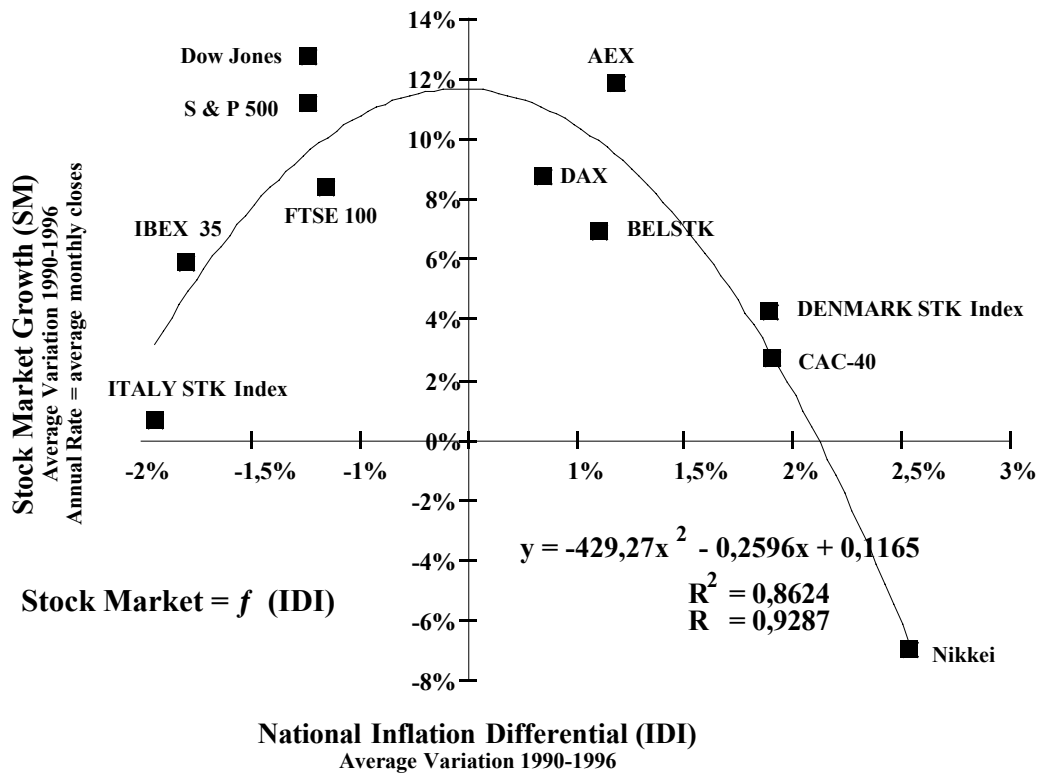
*Exchange Rate equilibrium point*  
*Balance of Trade equilibrium point*  
*Interest Rates optimum - Monetary policy optimum*  
*Gross Capital Formation optimum*

*High economic growth - Employment growth*  
**NATIONAL MACROECONOMIC OPTIMUM FROM THE MONETRARY PERSPECTIVE**

**The World Exchange Rate Market and the Natural Price Theory**  
*Gustav Cassel's Theory of Purchasing Power Parity (PPP)*



**The World Stock Market and the Natural Price Theory**  
*Stock Market Index (nominal) and National Differential Inflation*



In capitalisation terms, these ten stock markets represented: in 1988, just over 90% of the world stock market; in 1994 around 86%; and in 1997 about 85%.

A careful analysis of other empirical demonstrations (which relates stock market indices and interest rates) reveals an interesting fact: the stock indices which maintained a greater value during the period considered correspond to those nations in which the interest rates at natural value decreased in least proportion. This leads to a new and surprising proposition: *the interest rate optimum at nominal and real values is located at the stock market optimum at nominal and real values for each nation.* This stock market and interest rate optimum could be labelled *monetary optimum*. The monetary optimum might be defined, from the natural model, as: the interest rate level where the inflation differential tends to zero, the stock market optimum is attained resulting in the maximisation of the disposition and capability of the nation for investment (growth). However the importance of the monetary and stock market optimum discovered, goes far beyond the strictly financial or monetary framework.

It could be interpreted that the detection of the monetary optimum should be the principal objective of the macroeconomic policy of every nation. This is so because, this point corresponds to economic growth and employment creation, the stock market will attain its maximum in value terms, saving and investment will increase, the national budget balance will be an achievable target, the income per capita will grow, and other fundamental variables such as the exchange rate and balance of trade will tend towards equilibrium.

The argument is complex. Starting from the collection of empirical proofs obtained, a decisive conclusion is reached: *the world macroeconomic system is distorted, the same monetary causes that temporarily benefit some inevitably prejudice the remainder.* In other words, the macroeconomic adaptation of a nation to its monetary optimum brings about an unsuspected competitive advantage. The famous Nash equilibrium (non co-operative equilibrium), that is all games where none of the players can increase their earnings given the strategy of the other, is uncertain in macroeconomics.

Based on the evidence discovered, the monetary disequilibrium derives from the fact that the world economic system as a whole functions *naturally* subject to the governing principles of the labour standard value in conjunction with the law of supply and demand. However, the labour standard value is systematically perturbed and obscured by the monetary value standard and its evolution over time. Thus, the free and natural activity of prices brings about a permanent and monumental battle of macroeconomic adjustment where there are always winners and losers.