Analyse the purchasing power parity theory and discuss its applicability

Science

Question: “ Analyse the purchasing power parity theory and discuss its applicability” In this essay I will analyze the theory of Purchasing Power Parity and discuss its applicability. I will begin by explaining the basic concepts of PPP. In order to get a deeper understanding of the theory I will also briefly touch on topics such as the Law of One Price, the Big Mac index and similar subjects related to the Purchasing Power Parity theory. Furthermore the PPP theory will be put in to practice and its applicability will be discussed and evaluated using real life examples.

It is necessary to understand the functions of the PPP theory before giving a definition to it. The purchasing power parity theory is a measurement that is being used within the economy to compare the currencies of different countries and to see if their currencies are under or over valuated. It is also commonly used as a measurement to compare the living standard between two countries. The Purchasing Power Parity theory is developed on the basis of the law of one price (LOP).

The law states that once converted to a common currency, the same good should sell for the same price in different countries. (Kalinda Mkenda, 2001) To give an example of this lets neglect all the factors such as taxes, tariffs and transportations costs. The law of one price can then be explained with the following formula: e = PSWE/PUK where e equals the nominal exchange rate and P price. If I buy a bike in Sweden for 1000:- this means the same bike should, in theory cost ? 100 to buy in UK which gives us a nominal exchange rate of 10.

If a bike would sell for any price higher in UK, there would be a clear advantage for consumers to go to Sweden to buy bikes (remember that factors such as travelling costs are neglected in this example). Also, it would be beneficial for traders to go to Sweden and buy bikes and sell them in UK for a profit, also called arbitrage. However, this kind of activity would slowly drive prices higher in Sweden and lower in UK and in the end resulting in market equilibrium based on the theory of supply and demand (Mankiw & Taylor, 2006).

This leads us to the Purchasing Power Parity theory which states that price differences between countries in the long run is not sustainable because the market will drive the prices to equilibrium and that “ a currency must have the same purchasing power in all countries” (Mankiw & Taylor, 2006 p. 650). “ Purchasing Power Parities (PPPs) are currency conversion rates that both convert to a common currency and equalise the purchasing power of different currencies. In other words, they eliminate the differences in price levels between countries in the process of conversion. (OECD, 2010) The PPP can be expressed in either absolute or relative terms. The absolute theory on measuring exchange rates is the one mentioned above and is the theory this paper will mainly focus on. The other version, relative, is based on price movements. (Ong, 2003) It states that the inflation rate between two countries must be the same if the exchange rate is going to stay the same.

That is, if the inflation in one country X is higher than the country Y, its exchange rate will depreciate against country Y exchange rate based on the following formula: % e = % Inflationx -% Inflationy here e is the change in

exchange rate. As stated above, the absolute PPP theory is mainly used as a tool of measuring how a currency is valuated and whether it's under or over valuated. One very popular way to do this is using the Big Mac index (See appendix A) put together by The Economist. The Big Mac index is an index of how much a Big Mac costs in different countries. With this index we can compare the predicted exchange rate with the actual exchange rate to how a country's currency is valued. When we compare the PPP we use a basket of goods which is identical in the comparing countries, in this case our basket is a Big Mac.

When doing this we can predict an exchange rate based on the Law of one Price and PPP. When comparing the predicted exchange rate with the nominal exchange rate and this illustrates whether a currency is over or under valuated. Looking at the Big Mac index (See appendix B) we can see that Norway's currency is over valuated by almost 90% against the American dollar. This implies that in the long run the Norwegian Krone is expected to depreciate against the US dollar using the PPP theory. PPP is also being used for comparing different living standards in different countries.

If you for example use the GDP per capita you don't quite get an accurate overview of the standards as factors such as living costs and pricing varies between the countries. By eliminating the price differences in two countries and compare the raw price differences we get a clear overview of a country's living standard. Looking at the data in table 1 (See appendix C), we can see that the difference of GDP per capita between Sweden and UK is about ~8500 units, however, by comparing the GDP per capita based on PPP per

capita we discover a much smaller difference (~1000 units. This suggest that the actual living standard of these two countries are quite similar, something that does not show when comparing GDP per capita which is why using PPP is a better method than using GDP per capita when measuring welfare as it takes into account differences in prices and purchasing power. (International Monetary Fund, 2009) By developing root unit tests that account for both structural change and maintaining a long-run mean or trends Papell and Prodan (2006) argues that there is additional evidence that PPP is valid in the long run.

However data shows that there can be substantial and long periods of time with deviation from PPP exchange rate for either the relative or the absolute versions. (Pakko and Pollard, 2003) We can describe these variations with a few main explanations, starting off with the assumptions we had to make while explaining the law of one price: taxes, tariffs and transportations costs, but also adding a few points such as differentiated goods, pricing to market and non-traded goods. Marrewijk et al , 2006), (Pakko and Pollard, 2003), (Moffat, 2010) One simple reason why the law of one price and PPP fails is that exchange rates are influenced by many other different factors than just pricing. The existence of trade barriers and costs is one. Any variable that will increase the price in another country such as shipping costs or taxes will neglect the arbitrage opportunity and affect the exchange rates related to the PPP theory.

Other important factors to consider are that when explaining the law of one price we use a basket of identical goods, in real life however, very few goods

are the same and people in different countries consume different goods. Also, some goods cannot be traded across borders; real estate, haircuts and carwashes are examples of these, also called non-tradable goods. While a piece of property can be traded, its location cannot be changed, thus, prices of property can vary widely between different locations and we can expect this to account for deviations from PPP. When calculating the PPP we also require the markets to be perfectly competitive.

If a market is not perfectly competitive some firms may have more control than others and may use this as an opportunity for pricediscriminationand regulate the price for an identical good differently depending on the customer (Economist, 2010b) which will also cause the PPP to deviate from its expected value. As we can see by this, the purchasing power parity is a useful theory to use for measuring a country’s expected currency and living standard in the long run as it consider factors that are left out when using data such as GDP per capita or CPI, this way you get a much better perspective of the actual values.

The theory has been excessively tested in empirical studies with mixed results (Mac Donald, 1993), (Abuaf, N and Jorion, P, 1990), (Papell and Prodan, 2006), (Patel, 1990). Studies show that in the short-term there can be substantial deviations from the expected PPP and exchange rates related to the previously discussed factors, which makes it limited for predicting exchange rates in the near future. However, this argument illustrates that this theory holds true in the long run when calculating currencies and long term equilibrium.