

INTRODUCTION

Economics teaches rules about arbitrage, supply and demand, and risk-free profit opportunities that push commodity prices together whenever they diverge. There is one price for goods across international borders, to the extent that tradable goods are subject to the theoretical Law of One Price. However, poor nations with lower levels of per capita income have an almost implicitly lower price level, or cost of living. This paper scratches the surface in examining whether one global price for anything tradable exists once all price distortions are removed, as well as subjectively analyzing why there might be multiple price levels across nations, how they hinder low income nations from growing and slow global per capita income convergence, and what policies might help.

ROAD MAP

The road map of this paper is as follows: the first major section incorporates three subsections. Each subsection recaps and reiterates a short list of established or controversial economic theories that will be manipulated later in the analysis sections. First, the ideas of comparative advantage and income convergence are discussed, and mention is given to some nations that have gained and some that have lost in trade. Second, specific points regarding capitalism and globalization are discussed, with specific mention of how some fundamental rules of capitalism lend itself to a global economy. Finally, an analysis of Purchasing Price Parity (PPP), the Law of One Price follows. The second major section analyzes the empirical evidence that proves or disproves PPP and the Law of One Price. It then correlates international price differences as noted by major institutions like the World Bank with varying levels of per capita income. The third section gives two possible explanations for the established price differentials across nations despite the Law of One Price. The first takes a complex statistical approach aimed at proving that there actually is a single observable global price for tradable goods. The second speculates on why price levels and incomes may vary according to specific patterns. Finally, a brief wrap-up section and conclusion offers one suggestion for overcoming PPP differences in undeveloped countries based on the qualitative reason for the problem speculated on in the last section.

SELECTED ECONOMIC REVIEWCOMPARATIVE ADVANTAGE, FACTOR PRICES, AND INCOME CONVERGENCE

Widely accepted economic theory predicts benefit to all when trade is done. Whether internal, microeconomic levels – I agree to give you something and you agree to compensate me with agreed upon terms; to international macroeconomic trade where all countries involved gain based on comparative advantage theories. One or more factor inputs are relatively cheaper abroad, so businesses choose to produce there those goods whose production requires relatively abundant amounts of those specific factor inputs. Ricardian and Heckscher-Ohlin Models outline these ideas in depth, and I will not reproduce their works here except to recap what is directly applicable to this paper. Primarily, the most possible people will gain in the most profound way possible when businesses and countries engage in international trade. These gains, the minimalizing of any and all possible dead-weight economic losses to the world as a whole, are the underlying motivations behind the study of economics.

Many thoughts are applicable in an analysis of global economic welfare; for example, the Solow Growth Model offers dynamic predictions but fails, in the eyes of many people, to be any more than an abstract theory with little real-world value. This is because the model holds too many things constant. Capital growth will be accelerated in the lowest level income nations, accelerating per capita income growth, until capital stock reaches a steady growth level, income growth becomes constant, and in nations across the world, per capita incomes converge. This is unrealistic only because all the factors influencing investment growth through domestic savings and implicitly through capital account surpluses rely on so many uncontrollable exogenous factors such as: political unrest, international military conflicts, domestic religious or ethnic unrest, currency strengths and capital flight, coups, and the health of influential large foreign economies. However, in the long-run (maybe hundreds of years on a nominal scale), all these factors are variable, and even the most struggling nations like Zimbabwe, Sudan, Argentina, Ukraine, etc will have a twenty-year period in which all possible variables are stable and capital investment is allowed to grow significantly. There remains, despite repeated mixed empirical evidence on poor, developing nations engaged in trade, a justified hope that globalization will improve the standard of living for billions.

EMPIRICAL EVIDENCE: SOME WIN, SOME LOSE

To date, empirical evidence is ambiguous on the gains and losses impoverished nations feel from globalization. Many nations are exploited for land or labor due to their relative lack of economic leverage in a global market. A few examples include: accusations of sweat-shops across East Asia and Latin America; Western African exploitation of land for peanut farming by European conglomerates, similar to Filipino stories of land abuse in the pineapple industry; and hollowing out of the American auto industry with car parts made in Central America where workers are paid a fraction of what Americans earned. In many developing nations around the world, export orientation has brought high growth and income to previously impoverished urban laborers while rural farmers in the same nation are worse off than before, possibly because of tariffs and restrictions distorting food prices. The list of accounts and accusations goes on.

However, there are definite successes. For example, South Korea and Taiwan were both relatively poor following the Second World War; South Korea was absolutely destitute by the 1950s. However, through internal savings and foreign capital inflows, industrial capital investment grew at a high rate. Both nations focused on producing what it was they had a distinct comparative advantage at and turned to the global market to sell their products. Each definitely had periods of hardship since beginning their economic success, but in general, most people there are significantly better off economically than before. Government guidance, industry planning, and export orientation lead the way to minimalizing the soaring poverty rates these countries had. Their stories are revisited later in the section that tackles how to fix the problems still to be laid out.

APPLICABLE POINTS INVOLVING CAPITALISM AND GLOBALIZATION

One idea working against free trade and per capita income convergence across nations is a fundamental rule behind capitalism and factor production prices. These same free market forces are what allow for growth in destitute nations through trade. The ideas in the above section – comparative advantage and capital stock – have to have a profit motivator or else they will not be a reality. Corporate enterprises are naturally prone to acquire labor, land, and capital at the lowest costs possible to maintain competitiveness. This is beneficial to all when, for example, wages are paid by a company from a developed nation to workers in an undeveloped nation; and the wages paid, while below wages in the developed country, are above the undeveloped nation's pay level.

Modern times and production methods in manufacturing and agricultural sectors give large corporate entities the greatest edge in international trade. While current trends (the advent of affordable electronic data management systems in the late 1990s), are shrinking the scope of businesses, most enterprises that stretch across international borders are large and primarily faceless. They have advantages in efficiency, economies of scale, and lowered costs and greater competitiveness. All these are necessary for survival. However, if driven by a faceless enterprise, the search for the lowest cost factor inputs drives businesses to obtain workers at the lowest wages possible. By technical definition, then, this is slave labor – workers for as close to \$0 an hour as possible. Paying adequate wages is an ethical, human consideration. Few human beings choose to force others to work for nothing. However, if there is no moral watchdog within a corporation, wages of US\$0.50 a day, or farm land acquired for US\$1.00 an acre, are the most advantageous input factors. This is often (but not the most common) outcome in the globalization era – the very poor nations can be victimized very easily by those with the economic leverage to do so.

PURCHASING PRICE PARITY AND THE LAW OF ONE PRICE

HOW PPP AND THE LAW OF ONE PRICE SHOULD WORK

Purchasing Price Parity and the Law of One Price make as much sense as any theory in economics used today. The discrepancies between predicted, equalized price levels and actual, observable data, however, are core components for this paper. Basically, the Law of One Price states that if transaction costs are held constant or are negligible, the prices for the same, tradable good, across any international border will be equal. Arbitrage will push prices together when there are differences. For example, an ounce of gold is US\$800 in Tokyo and US\$900 in London, based on pound/dollar and yen/dollar exchange rates. Individuals will buy gold in Tokyo and sell it in London, netting US\$100 per ounce. All this is risk free and will continue until there is no gap in price. The gap closes due to supply and demand. Buying in Tokyo increases demand and raises the price. Selling in London increases supply and lowers the price. Eventually they meet at maybe US\$850 an ounce in both locations. Purchasing Power Parity, then, is the idea that one can buy the same good or service in different places for the same price.

There are obvious restrictions and limitations to this assumption that the theory does account for them. Cultural, ethnic, and religious differences might cause a good to be more or

less desired in one region of the world, possibly making it relatively unavailable, available at a higher price, or abundant and cheap. Also, since transaction costs are not actually constant, buying a good near its source of production is cheaper than buying it farther away and paying transportation and distribution costs as part of the final price. Government imposed regulations, import tariffs and quotas, export subsidies, and a variety of artificially imposed restrictions alter prices dramatically. The Law of One Price and Purchasing Power Parity, then, assume all these factors are constant and includes the restriction that a good or service must be tradable before it can be equalized in price. A typical example of this limitation is that a haircut given in Los Angeles is not tradable for a haircut given in Bombay. Without the opportunity to choose the lower priced service (assuming both haircuts are of identical quality), the prices will not equalize.

There are two related but separate definitions of Purchasing Power Parity. Both use the nominal exchange rate of two currencies to arrive at the single price one good should have across borders. However, relative PPP, in contrast to absolute PPP, takes into account inflation rates in the two compared regions as well. Both equations are shown in Figure 1.

PPP AND EMPIRICAL EVIDENCE

Purchasing Power Parity hold true on markets where there are almost no transaction costs and profit is easy. Particularly global electronic exchanges – where any security, bond, commodity, or currency can be traded internationally with typically negligible transaction costs relative to the arbitrage profit opportunity.

THE ‘BIG MAC INDEX’

One method of portraying the varying price levels for single good across countries was introduced in 1985 by journal *The Economist*. Every year they publish the ‘Big Mac Index’ – a comparison of the price differences for a Big Mac hamburger across different nations. While the index is primarily done for fun and is not a solid starting point for any serious economic analysis, it is a good visual method of displaying PPP variations across the world. And while a Big Mac hamburger can not be made in one country and then shipped to another for sale (McDonalds would if they could keep it from spoiling), the McDonalds Corp is an international company spanning the globe. Inputs include beef from North and South America and Happy Meal toys made in China. There are restaurants all over the world. The 2007 index is shown in Figure 2. The implications, despite a flawed data source in terms of

its applicability, are profound. Nations typically thought of as enjoying a higher per capita standard of living based on per capita GDP and economic quality of life (like Northern and Western Europe), show a PPP greater than the nominal exchange rate. For example, in Iceland, a Big Mac cost 509 Kronur and the nominal currency exchange at the time was US\$1.00 / Kronur 68.4. But in the U.S., a Big Mac costs \$3.22, implying that in Iceland, a Big Mac is overpriced at US\$7.44. In developing nations, the Big Mac is generally significantly underpriced in relation to the U.S. dollar. And if one argues that transportation costs are to blame, keep in mind that in Switzerland, the sandwich is overpriced and in the Ukraine it is dramatically underpriced relative to each nation's current nominal dollar exchange rate, yet both nations are close in geography to one another and are without adverse U.S. trade relations. Today, the Big Mac Index is beginning to feel a bit outdated, though, and the newly formulated 'iPod Index' is gaining notoriety.

THE EXAMPLE OF UNCLE JACK IN THE PHILIPPINES

A recent example of discrepancies in empirical evidence for the Law of One Price and PPP stems from my own experiences, or, more specifically, those of my Uncle Jack. He vacationed in the Philippines in February of 2007. He returned after two weeks with an abundant amount of souvenirs for the family. The Filipino Peso has taken a hit over the last several decades, as stagnant growth, prolonged government inefficiencies and corruption, and the 1997 Asian Financial Crisis took their toll on the national income level. GDP has been climbing at a strong clip for several years now, averaging 7% growth a year and reducing poverty levels by from 49% to 33% since 2001. The Philippines have been reducing tariff rates substantially since the mid-1980s, and today maintain a relatively low price and tariff (12%) levels (Figure 3). Per capita income for 2005 (Figure 4) was US\$1,320 in nominal figures and US\$5,300 when adjusted for purchase price parity. This ranks them 137 and 122 out of 208 nations, respectively. By 2007, 7% annual growth had increased these numbers even more, though.

When Jack returned from the Philippines, one item he purchased a lot of for the family was t-shirts. They were very high quality – thick, sturdy material not prone to ripping easily, stitched well, and of a higher grade than many clothing items still made in the U.S. Each was hand painted with a very colorful mural depicting points of culture specific to the nation – island landscapes, volcanoes, and Jeepneys (brightly painted jeeps, left behind after WWII, and modified to fit up to 20 natives for trips around town). The exchange rate at the

time was approximately 50 Filipino Pesos / US\$1.00, although he received less upon arrival due to conversion spreads. The t-shirts, while maybe not painted with designs particularly fashionable in the U.S., could be sold in Los Angeles for more than \$25 if the murals were modified to be more palatable to current U.S. fashion trends. Each one Jack bought in the Philippines cost approximately 125 pesos, or US\$2.50. They were bought in the cities, particularly Manila, where poverty rates are at their lowest and tourism is abundant. Yet the purchase price, even taking into account international shipping costs, U.S. import tariffs, and distribution costs, is considerably less than the \$25.00, ten times the nominal cost, a Philippines exporter could receive if the shirts were shipped to Los Angeles. It is empirical observations like this, even more than statistical data analyses that bring the Law of One Price into question.

CORRELATING PPP DISCREPANCIES WITH LOW NATIONAL PER CAPITA INCOME

ANALYSIS FROM THE WORLD BANK

Both the World Bank and the International Monetary Fund (IMF) generally recognize often significant differences in purchasing power across nations. The World Bank published a 79 page document in 2007 as part of their annual International Comparison Program, detailing GDP, per capita income, individual expenditures by type (food, restaurants, hotels, shelter, health care, transportation, etc), in domestic currency, nominal U.S. exchange rate figures, and figures adjusted for price level differences across 146 economies. Figure 4 shows several of these tables. They are the most intriguing statistical data available on the subject. The PPP variations prove a strong point. As a nation's per capita income gets lower relative to the United States as a reference point, their domestic purchasing power increases in terms of prices denominated in U.S. dollars, exchanged for the domestic currency. And as domestic per capita income increases in countries above the U.S. baseline, purchasing power decreases. An equalizing effect of income from poor to rich nations takes place. In Ghana, per capita income in 2005 was \$502, exchanged to U.S. currency at the nominal rate. However, citizens within Ghana had the ability to buy \$1,225 worth of goods and services based on domestic prices. However, Norway, with the second highest per capita income level at \$65,267, had \$47,551 worth of domestic purchasing power. There are significant discrepancies in import tariff rates in Ghana and Norway. Ghana taxes imports at around 12.5% plus additional fees and higher scales for specific goods. Norway taxes imports much

higher at 24%, but reduces rates on certain necessities and food. The pattern from Figure 3 from the U.S. Department of Commerce shows vaguely similar results. Regression analysis was not run on the data, but the pattern shows that higher income nations may impose higher tariff levels in an attempt to protect domestic producers. Lower income nations want to promote free trade due to their comparative advantages in factor input prices, and maintain lower tariff levels. This analysis, however, is generalized at best and a distinct upper versus lower income tariff pattern may not even be very distinct. Many developing nations maintain high tariff levels and possibly import substitution strategies, while many large economies like Germany have levels lower than many poor nations (Germany taxes at 7% to 19%). Although a regression analysis may prove in the end that tariffs, taken in conjunction with high transportation costs to developing nations like Central Africa, are the root cause of PPP differences across the world.

WHAT ECONOMISTS BELIEVE – CAUSE AND CORRELATION

The Penn Effect, developed at the University of Pennsylvania, is applied across the globe in an attempt to quantify the reasons why purchasing power is so varied across international borders. The method ranks goods and services across nations on their ability to be traded (a haircut is ranked very low, diamonds are the polar opposite), and adjusts basket prices by tradability. The less tradable a good or service is (i.e. haircuts), the more the price for that service will be affected by per capita income levels. In other words, a haircut is much less expensive in Ghana than in Norway. Adjustments for inflation and expected inflation, along with price level differences due to trading patterns affected by geographical proximity and ocean access (transportation costs), tax variations, per capita income, diversity of production, real consumption levels, global income distribution, and many other factors go into the final product: the Penn World Tables (PWT). The University of Pennsylvania Center for International Comparison has been compiling and publishing this data since 1950 and is considered a foremost authority on measuring and analyzing economic well-being across nations. Penn State produces more research on the subject than anyone; both statistical interpretations discussed (PWT) and qualitative research papers. However, the scope of this paper drew me towards formulating my own explanations and there is no review of the body of literature produced by Penn State in this paper.

OTHER APPROACHES

Price differences remain more than simply adding in tariffs and shipping costs to find equal prices on any concrete, exportable product. A major explanation for differences stems from consumer preference differences across borders – hamburgers are not big sellers in India, bacon is not in Israel, and U.S. consumers are not likely to pay much for a mince meat pie in relation to the British. A significant problem is finding comparable baskets of goods to compare prices across borders. Even two nations whose populations rely on a staple grain, one corn and one rice, have difficulties drawing conclusions about converging or diverging price levels of the food they consume the most, since they are two different commodities with varying factor inputs for production and varying levels of international demand and supply.

Most people today realize that the ‘cost of living’ varies depending on where you live. Parts of the world are known to have relatively cheaper housing, food, and transportation costs associated with living there, although most people agree that income and wages rise as one moves from areas with a lower price levels upward. Common explanations typically look at highly productive, skilled, and educated workers earning more income, and having consumption preferences adjusted for the situation (Mercedes Benz versus Toyota, rare seafood over grains). Also, those with more resources at their disposal can and will pay more money for a Big Mac than others. A worker in a developing nation, earning the exchange rate equivalent of US\$3.50 a day, would be unlikely to pay US\$7.44 for a Big Mac. A typical explanation, then, is that goods and services markets will charge the most that a region is willing to pay for an item if a monopolistic enterprise, versus a perfectly competitive industry, is the region’s supplier. All of which correlates back to the perceived efficiency of the workers of the region, or the marginal product of labor (MPL), and the subsequent pay scale.

PPP DISCREPANCIES EXPLAINEDONE POSSIBLE SCENARIO

The first possible explanation for PPP differences dreamt up for this paper is related to factor input prices and comparative advantage, particularly in regards to labor. For this, I will use a numerical demonstration with imaginary figures.

A domestic shoe manufacturer is paying workers \$15.00 an hour to sew shoes. The current exchange rate between the domestic and foreign nation is 1D / 1F. The foreign nation

is considered developing, the domestic is developed and per capita income in domestic is ten times foreign. The shoe manufacturer chooses to move production to the foreign nation, where wages are one-tenth domestic averages. Therefore, workers are paid \$1.50 an hour to sew shoes. Lower levels of income indicate a higher purchasing power in the foreign country, particularly for non-tradable goods. To justify the move overseas and the sub-standard wages, the company explains cost savings, lower domestic prices, increased market competitiveness, and the fact that the foreign workers produce less per hour than domestic workers. Their inefficiencies justify their sub-standard, arguably exploitative, wage rates. But if both the domestic and foreign workers are low skilled labor, and, for example, the domestic workers could produce one pair of shoes in one hour, then the unequal wage rates would imply that the foreign workers had a comparable marginal productivity of labor of one pair in ten hours; the same ratio of efficiency to match the wage differential. But if that was the case, the domestic shoe company would end up paying the same nominal amount of cash for a given quantity of shoes as before, only now there are transaction costs to get the shoes back to domestic markets. However, I find it difficult to believe that a low-skilled worker in a developing nation is as inefficient as a low-skilled worker in a developed as the numerical example implies. Instead, employers hire workers for one-tenth the wages to be more than one tenth as productive. Differences are made up by the workers based on lower domestic price levels and the business gains a lower priced factor of production.

In the end, then, the only way to empirically prove the actual existence of the Law of One Price is with the regression analysis set up in Figure 5. Because of the already defined and limited scope of this paper, I did not collect all the data or run the regressions here, but will explain the two possible outcomes and all the factors involved. The point of the analysis is to determine whether the PPP does hold with empirical evidence. The two answers, then, are yes or no – either the data proves the theory, or the theory is flawed for some unexplained reason. To run the experiment, nations with different levels of per capita income are compared, two at a time. To determine if prices are intrinsically equal, each nation has a basket of both tradable and untradeable goods and the price levels of each is given. If goods have different demand curves based on cultural differences, adjustments need to be made. However, it is more feasible to use goods common in both areas, maybe based on consumption volumes per capita. For example, rice, as a staple grain, is consumed in large quantities in Vietnam, Japan, Philippines, and Thailand; nations with high income level variations. The per capita income is dependent on wages, particularly unskilled labor in

poorer nations. The worker efficiency (MPL), and therefore wages and percent of workers with skill sets, are dependent on education levels. The goods basket for PPP assessment, with tradable and untradeable goods, has untradeable price levels dependent on worker income (average wages). Tradable goods are expected to trade at global prices only if from a perfectly competitive market. Monopolistic suppliers have control over prices, and may choose to manipulate prices according to the same rules as untradeable goods – prices dependent on income as long as there is expected profit. Tradable, competitive market goods have to have prices adjusted for national income tariff levels and differences in transaction and transportation costs. For example, transportation costs on goods shipped from Europe to South Africa or central Sub-Saharan Africa have very different levels based on ocean and road access. Finally, to compare price levels, nominal exchange rates and inflation rates affect the real exchange rate. A margin of error is necessary – a Big Mac in Norway for \$3.28 is equivalent to a Big Mac in Ghana for \$3.18.

The regression is not only too complex in terms of data retrieval and analysis for this paper; it may just be too complex period. Some data may be too subjective to quantify while other information may be nearly impossible to retrieve. However, an analysis like this may finally prove if the Law of One Price is real. Taking all these possible, seemingly exogenous variables into consideration and quantified, an equal global price level should emerge. If it does not, then we have to look elsewhere for reasons why PPP does not hold and what implications this has.

ANOTHER POSSIBLE SCENARIO

If the explanation above ends up yielding inconclusive results or PPP is proven empirically false, what, then, is the cause for the price differential spread across nations? One theory I propose has to do with a lack of consolidated business resources in developing nations. As Keynes would say, the problem is ‘sticky’ – small, 1 to 100 person domestic business operations in undeveloped nations do not have the resources to export goods overseas. Tariffs, transportation, transaction, and distribution costs are not feasible without a large corporate structure to financially back the exporter. The problem, then, is ‘sticky resources’. It is difficult to build the size of a small business within a small impoverished nation. A big business is hard to build and lends itself to the necessary practices of corporations such as paying the lowest possible wages, to the point where workers are exploited but the business is globally competitive. Contributing to the problem is the fact that

a business in a nation with a lower price level has to pay transaction costs to industrialized nations at their price level.

Returning to the example used earlier of Jack, who visited the Philippines and bought a large amount of shirts for a fraction of the price he would pay in the U.S. based on the dollar / peso exchange rate. Imagine paying shipping and distribution costs in dollars – it's a large amount of cash up front. One t-shirt sold domestically raises 125 Pesos, or US\$2.50 – little ground made towards a small enterprise being export-capable. The small business must build a solid liquidity base and reach a specific capitalization to afford to trade internationally. Even liquidity through lending may fall short if the business is considered risky and the amount requested is high.

Companies fail to build their liquidity base and grow not because of labor shortages, high domestic wages, input deficiencies, or experience. Instead, the weak domestic per capita income provides no consumption market in comparison to international markets, and PPP discrepancies naturally keep any domestic capital gains (revenues and profits) insignificant on an international level. The Filipino producer with a comparative advantage of cheap labor can not export to capitalize on their advantage, causing a failure to grow wages and domestic prices and income levels. The problem comes full circle – the situation does not change. Purchasing Price Parity failures and stagnate growth, causing those same failures to continue. Corporate enterprises may subsequently buy up the t-shirts and t-shirt producers for exporting, necessarily demanding the lowest cost labor possible to stay competitive, further stalling wage improvements and PPP equalization.

FIXING THE PROBLEM...ONE IDEA

In small, undeveloped, nations, government stability may be the key. But not in ways traditionally imposed by organizations like the IMF. Instead, economic leadership by the government in the form of temporary central planning, deliberately designed to exploit the industries where domestic producers have a comparative advantage on international markets may be the best alternative. All this is meant from the beginning to be temporary. The government must lay out a plan from the beginning to gradually shift to free markets across the nation with minimal government induced market distortions as the nation nears industrialized status.

The proof for this method lies in the successes of the East Asian nations like South Korea and Taiwan. While the poverty levels and exploitation there are still troubling today,

these nations have successfully reduced poverty at amazing rates and nearly obtained industrialized nation status. To do so required a hard mix of government support and allegiance with small, medium, and large domestic businesses and possibly the sacrifice of a generation of poor laborers. The governments went too far in many cases, made poor decisions regarding which industries to support at times, and periodically had trouble allowing free-market forces take control and shut down inefficiencies and rent-seeking when sectors had grown sufficiently.

But governments collectively designed their economies to be competitive and export oriented. When a small, 20 person business needs liquidity to export goods, the government and monetary authority collectively agree if the liquidity asked for will significantly grow the domestic economy. Financial markets and banks operate as they should, but government aid is included in evaluating business liquidity requests, foreign investment pores in, and viable, globally competitive business ideas are granted. Short-run profitability is not the requirement for financial assistance. Industry and national objectives are instead fundamental to success. Basically, the government acts as the liquidity insurer for small businesses that large corporations enjoy because of their large scope. The real price is paid by a generation of uneducated, unskilled laborers, already living in rural or urban poverty, having to endure a lifetime of harsh urban life similar to 'The Modern Times'. Pockets of labor sectors grow wages and prices unevenly compared to other sectors, until the day of success is achieved – industrialized nation status, switching from export oriented to consumer based economies, and shrinking PPP differentials so they can not cause any more problems.

CONCLUDING POINTS

If there are in fact PPP discrepancies across the world that mathematical and statistical regressions can not account for, then there must be other forces at work to widen price differentials. A Keynesian approach of some type is most relevant: free markets, expressed logically, fail to describe the real world. Time delays in market forces and resulting general inefficiencies caused by some variables adjust quickly while others do not is central to a lot a Keynesian macro theories.