Evolution of wage shares of income during economic globalization

1. INTRODUCTION

Economic growth is one of the central topics in the macroeconomics field. More specifically, the idea of “balanced growth” receives much focus in many attempts to understand what types of technical change lead to economic growth, based on past macroeconomic data. When using the Solow model of economic growth, the so-called Kaldor facts are essential for understanding the role of technological change in the growth of economic output. Established by Nicholas Kaldor in 1963, the Kaldor facts are a series of observations of the behavior of certain economic variables during periods of balanced growth. One of the Kaldor facts is that the distribution of income between labor and capital remains roughly constant over time. Within the Solow model, these Kaldor facts then require labor-augmenting technical change in order to achieve a balanced growth path.

Recently, however, there has been some debate that the labor (wage) and capital shares can no longer be considered constants. Based on more recent macroeconomic data from the past 30 to 40 years, some have argued that the wage share of income is experiencing a distinct decline, rather than fluctuating about its previous level. Depending on the data used, it is difficult to reach a definitive conclusion, particularly in the U.S., as to whether it is just a fluctuation or an actual sustained decline.

Furthermore, when looking at international data for the wage share of income, it remains relatively constant within countries, but there is much variation between countries as to what the wage share of income is. Notably, developed countries typically have much higher wage shares of income than developing countries.

2. ANALYTICAL FRAMEWORK

For those that believe that the wage share of income has experienced an actual decline in the past
30 to 40 years, several possible explanations have been given. One of the more compelling reasons given, which this paper will focus on, is the effect of the increasing globalization of labor markets during this period. As mentioned earlier, there is significant variation of wage shares of income among different countries on the international scale due to the significant variation of economic situations between these countries. As labor markets have become increasingly globalized, however, this has likely had the effect of weakening some of the barriers between labor in different countries, allowing multinational business operations to much more easily access labor on the international market.

Accordingly, the hypothesis of this paper is that during the period of economic globalization in the last quarter of the twentieth century, there was a conditional convergence of wage shares of income between countries. The convergence will be conditional on the relative intensity of the impact of globalization: countries that experienced the greatest effects from the onset of globalization would be more likely to experience a significant convergence of wage shares. As businesses in developed countries (where wage shares of income are relatively high) gain increased access to international labor markets due to globalization, they will be more attracted to use less costly labor in other less developed countries in order to maximize profits. The decreased demand for labor in developed countries will cause wages to fall, reducing the wage share of income as a result. Conversely, the increased demand for labor in developing countries will create upward pressure on the wage share of income in these countries. As the relatively high wage shares in developed countries fall and the relatively low wage shares in developing countries rise, there will be a conditional convergence of each particular country's wage share specific to its national labor force, towards a global wage share specific to the international labor force. These effects will be less marked among countries that have not had felt such a significant impact from economic globalization. To test this hypothesis, I will use macroeconomic data from a sample of developing and developed countries with a wide range of wage shares of income to see if countries with relatively low wage shares of income were more likely to see an increase in wage shares,
and vice versa, during globalization toward the end of the twentieth century. Using the Trade Intensity Ratio (TIR) as a proxy to measure the relative effects of openness to trade and globalization between different countries, I will look for a relationship between openness to trade and globalization and the convergence of wage shares of income between countries.

3. DATA

The data used for this empirical analysis came from the Extended Penn World Tables (EPWT), version 4, compiled by Adalmir Marquetti and Duncan Foley. This dataset was calculated from the Penn World Table 7.0, which contains macroeconomic data for 189 different countries. The data set covers for some countries the 1963-2009 period. There is no definitive agreement on precisely when the period of economic globalization began, but based on the availability of data in the EPWT, I decided to analyze the time period from 1973 to 2003. I used a sample group of 33 countries, split into two groups based on their TIRs. I will test my hypothesis by comparing the behavior of countries in these two separate groups.

The key economic data from the EPWT that I used for my analysis was the wage share in the GDP. The appendix on data source and technology for the EPWT discusses how this variable was calculated: “The wage share (WS) is share of the employee compensation in the Gross Domestic Product. It was calculated in current prices of the local currency. The computation of the wage share is based on the following sources: UN (1982) for 1963-1980; UN (1989) for 1970-1986; UN (1994) for 1986-1990; UN (2001) for 1991-1998; UN (2008) for 1999-2003 and UN (2011) for 2003-2008.” Based on the wage share data, I also calculated the differences in wage shares from year to year, within each country analyzed.

Another important source of data was the measure of Trade Intensity Ratio from Leamer (1988). This ratio was calculated for each sample country as the absolute value of the difference between exports and imports, divided by Gross National Product. I propose to use this data as a measure of the
intensity of the effects of globalization. Countries with relatively high TIRs have a greater trade imbalance between imports and exports. This means that they rely more heavily on trade, and thus their economies will be more susceptible to the effects of globalization.

4. ESTIMATION

To test for the effect of TIR on the convergence of wage shares, I separated the sample of countries into two groups based on the TIR ranking for each country. Countries with relatively low TIRs were placed in the first group: United States, United Kingdom, France, Spain, Austria, Colombia, Canada, Japan, Australia, Turkey, Sweden, Italy, Switzerland, Peru, Denmark, and Greece. Countries with relatively high trade intensity ratios were placed in the second group: Egypt, Finland, Thailand, Israel, Norway, Netherlands, Belgium, New Zealand, Morocco, Panama, Portugal, Ireland, Sri Lanka, Costa Rica, Iceland, Trinidad & Tobago, and Hong Kong. After the countries were divided into two separate groups, one with relatively low trade intensity and one with relatively high trade intensity, I performed a separate Ordinary Least Squares (OLS) regression for each group. To test for conditional convergence of wage shares of income between countries, I used the OLS regression to test if countries that began with relatively low wage shares in 1973 were more likely to see an increase in wage shares during the period of 1973 to 2003, when compared with countries that began with relatively high wage shares in 1973. The independent variable used in the regression was the country’s wage share of income in 1973, and the dependent variable was the change in the country’s wage share from 1973 to 2003.

5. RESULTS

The results of the first regression, corresponding to the first group of countries with relatively low TIRs, show little to no convergence of wage shares in this group. The results in Table 1 show the regression estimate where “var1” represents the wage share of income in 1973, and “var2” represents the change in wage share from 1973 to 2003.
The estimated coefficient is slightly negative, but is very close to zero, and not statistically significant. For this first group, there is no significant relationship between the country's starting wage share in 1973 and the change in the wage share from 1973 to 2003. Figure 1 further illustrates that there is no discernible convergence trend for wage shares within this group of countries.

In contrast with the first regression, the results of the second regression, corresponding to the second group of countries with relatively high TIRs, shows a conditional convergence of wage shares. The results in Table 2 show the regression estimate where “var3” represents the wage share of income in 1973, and “var4” represents the change in wage share from 1973 to 2003.

Table 1

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<th>df</th>
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<td>0.003345708</td>
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| var2 | Coef.  | Std. Err. | t     | P>|t| | [95% Conf. Interval] |
|------|--------|-----------|-------|------|----------------------|
| var1 | -.0141662 | .1483788 | -0.10 | 0.925 | -.332407 -.3040746 |
| _cons | -.0156099 | .0740232 | -0.21 | 0.836 | -.1743739 .1431541 |

The estimated coefficient is slightly negative, but is very close to zero, and not statistically significant. For this first group, there is no significant relationship between the country’s starting wage share in 1973 and the change in the wage share from 1973 to 2003. Figure 1 further illustrates that there is no discernible convergence trend for wage shares within this group of countries.
The estimated coefficient is significantly negative, indicating that countries with relatively high wage shares in 1973 were more likely to experience a decline in wage shares from 1973 to 2003. Figure 2 further illustrates that there is a significant convergence trend for wage shares within this group of countries.

6. CONCLUSIONS

The results of this empirical analysis support the hypothesis that countries with relatively high trade
intensity were more likely to experience convergence of their wage shares of income, due to the effects of globalization. Countries that were relatively closed to trade in the last quarter of the twentieth century do not appear to have experienced a convergence trend, while those countries that experienced a higher level of trade intensity during this period experienced a significant convergence of their wage shares of income. For these countries in the high TIR group, beginning with a relatively low wage share of income in 1973 meant a greater chance of seeing that wage share increase over the next 30 years, while the opposite was true for the countries in this group that began with relatively high wage shares in 1973. However, more research would still be required to establish a more clearly causal connection between economic globalization and this conditional convergence of wage shares between countries. It could be useful to attempt further research using different measures of openness to trade as a proxy for the impact of globalization on a country’s economy. Another potential line of inquiry relating to the issue of wage shares is why there appears to be an overall decreasing trend in wage shares of income throughout the world since the 1970’s. All of these results could potentially add significant doubt to the validity of the Kaldor fact concerning constant shares of income for a balanced growth path.

REFERENCES


http://www.nber.org/chapters/c5850 1988