EXCHANGE RATE AND UNEMPLOYMENT

The Effect of Exchange Rate on Unemployment Rate in Asian Countries

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Abstract

The main objective of this study is to investigate the effect of Exchange rate on Unemployment rate in ASIAN countries. Unbalanced panel dataset of ten ASIAN countries has been taken that includes Pakistan, India, China, Japan, Bangladesh, Argentina, Algeria, Brazil, Colombia and Sri Lanka from the period of 1995 to 2005. The study has been found that Exchange rate volatility has positive and significant effect on unemployment rate in ASIAN countries.

Key words: Exchange rate, Unemployment rate, Asian countries.
1. Introduction

Aside from many factors such as interest rate and inflation, the exchange rate and employment are the major factors that keep importance in country’s economic progress. Exchange rate and unemployment issues are at the heart of Asian economies. Many Asian Countries are facing balance of payment problem. In order to cope with such problem, they go for exchange rate regime. They do prefer flexible exchange rate regime, the reason behind to go for such flexibility is that it keep macroeconomic adjustments easy for both foreign and domestic shocks. However, such flexibility also results in high cost because of the high fluctuations in nominal and real exchange rate that may apart us from differently allocating the resources. Hence, Exchange rates play a very important role in a country's level of trade, which is very critical element for every open market economy. That’s why for such reason, Exchange rates are among the most observed, examined and governmentally manipulated economic measures.

Besides that, the most frequently discussed symptom unemployment is another major problem for Asian countries. One of the reasons behind such problem is the mismatch between the job seekers and the set of jobs because most of time person require such job regarding his skills, preferences concerning work environment (large firm or small, formal or informal), where the individual lives and willingness to commute and on the other side firm require such worker who can meet the requirements of the job and can grow up their company. Because of this mismatch, the level of unemployment is moving up and the most crucial reasons of this unemployment are the increasing rate of population growth, unliterary, bribery in public sectors and government policies for reducing inflation and trade deficit. Further, the emergence of unemployment in the towns and cities at a startling percentage is accounted for by factors and these factors are relates with labor migration from rural side to urban side. More is the incapability of the urban areas to
provide employment because of insufficient factors of production to work with labor and capital, this situation is described by the mass movement of people from rural side to urban side with the expectations of handsome real wages in urban areas than in rural areas.

Hence Exchange rate and Unemployment volatility jointly add up several problems in Asian developing countries and this can be examined through many variables. For example, Net exports when exchange rate increases then exports also get increased. Overall, this creates positive and influencing effect on net exports. Beside that as we have to produce more so our demand for labor increased and this creates positive effect on employment. So net export is only one of the variables, other variables can be Labor Productivity, Gross Domestic Product (GDP), real interest rate as well as inflation that can create their positive or negative impact on Unemployment.

So our main aim of this paper is to analyze the effect of exchange rate on unemployment rate in Asian countries because these problems impact badly on the accomplishment objectives of full employment, economic development, price stability and GDP.

2. Literature Review

There is a vast variety of literature present on this topic of the relationship between Exchange rate and Unemployment and among other variables as it has been the topic of great debate over the years especially in terms of its implications on many developing and developed countries.

In recent decades, Employment in many countries has been declining because of their openness in trade for example Kim (2005), Colantone (2006) and Yanhui and Wang (2006) provided some evidence that those countries that have higher degree of openness are affected more from exchange rate fluctuation in terms of employment. Filiztekin (2004) also found negative effect of depreciation of Turkish currency (LIRA) on employment as well as on wages but with the
more affect on wages. However, the results were not that much shocking because of the high dependency of Turkey on foreign inputs. But, Alexandre et al (2010) and Nucci and Pozzolo (2004) was of the view that low technology sector firms and other firms who has more reliance on imported inputs have their competitiveness and employment negatively affected by a depreciation of the exchange rate. Further in terms of import and export orientation, Caglayan and Torres (2010) found negative effect on investment and unemployment for firms that are in Mexican manufacturing sector whereas vice versa for import oriented firms.

Another strand of the literature has been focusing on the direct impact of movements in Real Exchange rates on Unemployment in different countries like Frenkel and Aros (2006) for Latin America, Akpan (2009) for Nigeria, Chang and Shen (2011) for Taiwan, South Korea and Singapore and Burgess and Knetter (1998) for G-7 countries all found positive relationship between exchange rate and unemployment. A similar view gave byApergis (2000), Ngandu (2008) and Broll and Sabine (2010) found positive impact of exchange rate on employment. Others but by having the involvement of other variables also like Goldberg and Tracy (1999) and Nucci and Pozzolo (2009) analyzed real exchange rate has significant effect on average hourly earnings, hours and employment. Further Faria and Ledesma (2004) analyzed the impact of real wages and real interest rate on employment was positive while negative of real exchange rate whereas Hua (2007) for 29 Chinese provinces found that whenever the other currency appreciates it create negative effect on employment through three channels (technological channel, export volume channel and efficiency channel).

With respect to Manufacturing and non-Manufacturing firms as well as with traded and non-traded sectors, Ewing and yang(2009) found that manufacturing employment has long run relationship with exchange rate but they found no any relation with respect to non-
manufacturing employment. A similar view gave by Paulo Basto and Peter Wright (2009) on wages of currency appreciation in Portuguese manufacturing industries. Further Ngandu (2009) found from such appreciation, traded sectors were negatively affected while non-traded sectors were positively affected.

Pattichis et al. (2011) showed that exchange rate volatility has a negative impact on import trade, for this reason importing firms will feel reluctant to invest and hence create unemployment whereas Stirbock and Buscher (2000) found not any systematic influence of exchange rate volatility on employment in the complex model (dynamic Okun-type specification), but found negative impact in the AR model. Further Abdulnasser and Manuchehr (2006) found that 1% appreciation of the real exchange rate destroys 0.95% of tradable jobs over the next two years whereas Demir (2010) found that on average one standard deviation change in exchange rate decreases employment growth between 1.4-2.1 percentage points. In terms of currency, Belke (2005) found instability against euro increases unemployment significantly in ten CEEs economies likewise Danny and Terence (2007) found same result for Canadian dollar. Razzaque (2001) found that except two currencies French and US dollar, all other currencies British pound, French franc, German mark and Swiss franc do have impact on the movement of Pak rupee exchange rate.

These papers, among others, have emphasized the role of trade also in the determination of the impact of exchange rates on different variables and economic activity. Haltiwanger et al. (2004) found decline in net employment growth as trade exposure increases and Zehra and Aurangzeb (2002) found that real depreciation in the Rupee (Pak currency) may be used as a tool of policy to improve the trade balance. Further Holt (2003), Solakoglu (2010), Linda, Tracy, and Aaronson (1999) and Frenkel (2004) also found decline in employment because of more export.
Nurmi (2004) comes up with three findings that 1) Import competition will create negative effect on employment while higher exports create positive one, 2) Plants with lesser size and competence bear more employment loss as compare to bigger one and 3) Trade Liberalization increases job turnover of export-intensive industries, whereas import competition reduces job turnover. Tomiura (2001) found Japanese employment significantly responsive to change in import price, import competition and industry import share. Campa and Goldberg (1998) found movement in the exchange rate will increase the export orientation of the industry, the amount of import competition and dependency on imported input into the production of industry whereas Manuchehr (1999) that exchange rate fluctuations may have little impact on the prices of exports and imports.

The rest of the paper is organized as follows; section 3 begins with description of data for our empirical study as well as for our model, section 4 give us results followed by our model that attempt to evaluate the impact of exchange rate on unemployment and section 5 concludes.

3. Data and Methodology

The data is obtained from the World Data Bank, IMF and federal office of statistics. To examine the relationship between Exchange rate and Unemployment rate in ASIAN countries, unbalanced annual panel data for selected countries (Pakistan, India, China, Japan, Bangladesh, Argentina, Algeria, Brazil, Colombia and Sri Lanka) is used over the period 1995-2005. All variable consists of annual data; total observations are 660 and the ordinary least square method is used to determine the equation.

The model is as follows:
The dependent variable is unemployment rate, whereas all other are our independent variables like \( ex \) refers to Exchange rate, \( nx \) to net exports, \( ir \) is real interest rate, \( y \) is GDP per capita and \( lp \) refers to labor productivity, these all are variables that chose for research in order to evaluate the effect of exchange rate on unemployment in Asian countries.

4. Results

Table 1 shows the results of the effect of Exchange rate on Unemployment rate along with other variables. Each column represents a different regression and each row represents a coefficient estimate as well as standard error.

Column (01) in table 01 presents the effect of Exchange rate on Unemployment rate; the coefficient on Exchange rate is positive (.05) and showing its significance level at 1%. According to this estimate, there is positive effect of Exchange rate on Unemployment rate. As discussed above, the effects of exchange rates on unemployment should differ according to the
Dependent variable: Unemployment rate in ten Asian countries; 660 observations.

<table>
<thead>
<tr>
<th>Regressor</th>
<th>(01)</th>
<th>(02)</th>
<th>(03)</th>
<th>(04)</th>
<th>(05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-0.532748** (0.219586)</td>
<td>-0.455104** (0.218653)</td>
<td>-0.823120** (0.242481)</td>
<td>-0.461261 (0.353440)</td>
<td>1.108395 (1.072786)</td>
</tr>
<tr>
<td>Exchange rate</td>
<td>0.055007*** (0.018487)</td>
<td>0.051756*** (0.018193)</td>
<td>0.059345** (0.023606)</td>
<td>0.058389** (0.023436)</td>
<td>0.061304** (0.023570)</td>
</tr>
<tr>
<td>Net export</td>
<td>-0.068194** (0.033828)</td>
<td>-0.055246* (0.029826)</td>
<td>-0.052651** (0.030539)</td>
<td>0.065751** (0.032378)</td>
<td></td>
</tr>
<tr>
<td>Real interest rate</td>
<td>0.027985** (0.011352)</td>
<td>0.023446** (0.011724)</td>
<td>0.025694** (0.012787)</td>
<td></td>
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<tr>
<td>Labor productivity</td>
<td>-0.000162* (9.22E-05)</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>(Lp)</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>Labor productivity</td>
<td></td>
<td></td>
<td>3.15E-09* (1.82E-09)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Column (02)</th>
<th>Column (03)</th>
<th>Column (04)</th>
<th>Column (05)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GDP per capita</strong></td>
<td>-0.410105 (0.293384)</td>
<td>-0.797115* (0.453824)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>SER</strong></td>
<td>1.924407</td>
<td>1.886266</td>
<td>1.571079</td>
<td>1.559130</td>
</tr>
<tr>
<td><strong>R²</strong></td>
<td>0.105577</td>
<td>0.152138</td>
<td>0.238486</td>
<td>0.262121</td>
</tr>
<tr>
<td><strong>R²</strong></td>
<td>0.093652</td>
<td>0.129223</td>
<td>0.201638</td>
<td>0.213736</td>
</tr>
<tr>
<td><strong>F-Test</strong></td>
<td>8.852958</td>
<td>6.639197</td>
<td>6.472235</td>
<td>5.417354</td>
</tr>
</tbody>
</table>

The regressions were estimated using panel data on ten Asian countries from 1995-2005.

Standard errors are given in parentheses under coefficients. Individual coefficients are statistically significant at the *10%, **5% and ***1%.

The degree of trade openness therefore in Column (02), to remove omitted biasness this study includes another variable Net Exports to measure openness and that results in decrement of coefficient of Exchange rate but showing again positive affect with the 1% significance level and also showing significant effect on net exports. Further R² also jumps from 10.55% to 15.21%.

In column (03), there is addition of one other variable that is Real interest rate. The study selected Real interest rate as a variable because many industries and companies now take loans from banks to complete their projects so in this regard when real interest rate get increased their ongoing projects will be get closed and ultimately unemployment will rise. Results of this column show significant effect of net exports, exchange rate and real interest rate with significance level of 5%, 10% and 5% respectively. R² also jumps from 15.21% to 23.84%.
Further in column (04), there is adding of one more variable which is GDP per capita, results do not show significant effect of GDP per capita but show significant effect of rest of variables. $R^2$ also jumps from 23.84% to 26.21%.

In column (05), in order to remove the impact of non-significant variable which is GDP per capita, this paper include another variable which is Labor productivity because it has strong relation with GDP per capita and unemployment rate. As productivity of a labor increase, industries do demand less labors for production in order to save the cost. But when productivity of a labor is less than industries they do demand more labors but this is true for a certain level because labor productivity has non-linear relation with the unemployment. Results show significant effect of exchange rate, net exports, real interest rate, labor productivity and GDP per capita with significance level of 5%, 5%, 5%, 10% and 10% respectively. $R^2$ also jumps from 26.21% to 29.89%.

5. Conclusion

This study examines impact of exchange rate on unemployment rate in Ten Asian countries. Literature reveals that shift in demand for labor because of the change in exchange rate depends on the external exposure of firm. So by using an OLS model, the study reveals that exchange rate has positive impact on unemployment rate, implying such fact ASIAN countries have more reliance on imported goods as compare to exported goods. The implication of this study is that if countries maintain their exchange rate then they can control unemployment level, because exchange rate is one of important factor of trade between two countries.
References


Bastosy and Wright. (November 21, 2009). Exchange rates and wages in unionized labor markets


Fernando, Pedro, Cerejeira, Portela .(March 2010). Employment, exchange rates and labor market rigidity.


Nucci and Pozzolo (2004). The effects of exchange rate fluctuations on employment”, University’s di Roma “La Sapienza, University’s del Molise. *University’s di Roma “La Sapienza, University’s del Molise*.


Roberto Frenkel .(2003). Real Exchange Rate and Employment in Argentina, Brazil, Chile and Mexico.*Centro de Estudios de Estado y Sociedad (CEDES).*


