# Reply to Referee Report #3

First of all, I would like to thank the referee for careful reading and very useful comments. We think that the suggestions help us to further increase the quality of the paper, and we are optimistic that we can address them accurately. In what follows, we reply separately to each point raised in the report.

1. A careful proofreading will be thoroughly done to the paper in order to correct any grammatical mistakes and typos.

2. Absolutely, foreign producers who set prices and not importers. It would be more appropriate to use "foreign vs domestic" and "exportes" vs "importers". I will be more careful when using these terms.

3. When we say that the presence of menu costs could generate "asymmetry" in ERPT, this means that foreign firms are more likely to adjust their prices after large shocks than after small shocks. In fact, if price changes are costly, a small currency movement can be accommodated within the markup margin. However, if exchange rate change surpass some limit, the costs of not adjusting prices are higher, leading firms to change prices more promptly. As a results, pass-through would be different with respect to the *size* of exchange rate changes. To capture this kind of behaviour, we used an ESTR model with the following U-shaped exponential function:

$$G(s_t; \gamma, c) = 1 - \exp\left\{-\gamma(s_t - c)^2\right\}$$

This transition function allow for *symmetric* dynamics with respect to negative or positive deviations of the transition variable from the threshold level, i.e. whether the transition variable is below or above the threshold (whether $(s_t - c) \to \pm\infty$). However, the dynamic behaviour is *asymmetric* depending on whether the transition variable is near or far away from the threshold level. In other words, what matters here is the *size* of the deviations from the threshold level and not the direction (see Figure 1). So, I totally agree with the referee that we have employed a symmetric U-shaped exponential function, but it enables us to capture asymmetry with respect to the size of exchange rate changes.

Figure 1: Exponential Function
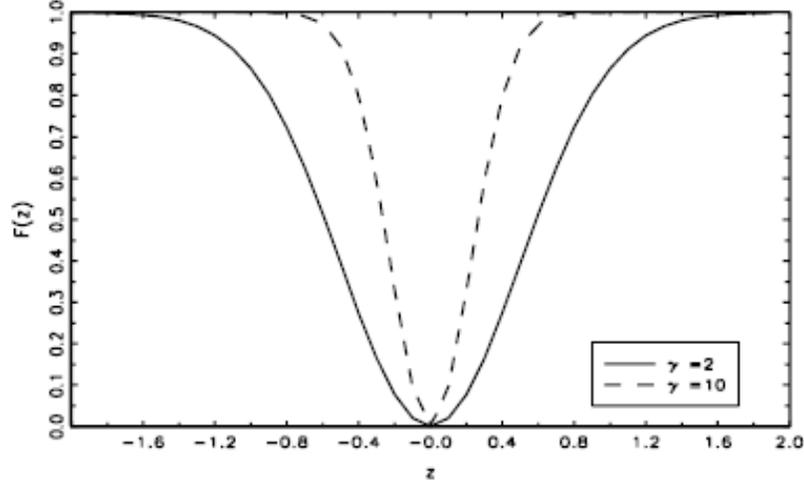
4. Concerning the equation (3) in the text ($\mu_i = \mu(Y, E^{\kappa(\Delta e)})$), we assume that markup depends mainly on two factors: first, demand pressures in the importing country; Second, the direction/size of exchange rate changes (since foreign firms would have different pricing strategy with respect to the magnitude or the direction of exchange rate movements). For this latter factor, we propose a function $\kappa(\Delta e)$ that captures possible nonlinear response of pass-through with respect to the direction or size of currency movements.

According to (1) and (3), we have:

$$P = E.\mu(Y, E^{\kappa}).W^*$$

Thus, we can capture the arguments of this latter equation through a log-linear regression specification (with lowercase letters reflect logarithms):

$$p_t = \alpha + \beta e_t + \psi y_t + \kappa e_t + \delta w_t^* + \varepsilon_t$$

Rearranging, we obtain the same equation (4) in the paper:

$$p_t = \alpha + [\beta + \kappa] e_t + \psi y_t + \delta w_t^* + \varepsilon_t$$

5. The parameter ϕ is used just for denoting the nonlinear coefficients in both pass-through regression (equation (5)) and STR model (equation (6)). We don't pretend that is same thing, but we can say that STR model would follow the same pattern as the threshold theoretical model (equation (4) and (5)) but assuming a smooth transition across regimes. In the revised version, I will use another parameter to distinguish between the two models.

6. In fact, we can include lags of inflation (π_{t-j}) as explanatory variables in the empirical specification (equation (9) in the text) to take into account the inertial behavior of inflation (backward-looking inflation) as follows:

$$\pi_t = \alpha + \sum_{j=1}^{N} \lambda_j \pi_{t-j} + \sum_{j=0}^{N} \psi_j \Delta y_{t-j} + \sum_{j=0}^{N} \delta_j \Delta w_{t-j}^*$$
$$+ \sum_{j=0}^{N} \beta_j \Delta e_{t-j} + \left(\sum_{j=0}^{N} \phi_j \Delta e_{t-j} \right) G(s_t; \gamma, c) + \varepsilon_t,$$

Also, we can use a measure of output gap (gap_t) instead of the output growth (Δy_t) as a proxy for changes in domestic demand conditions. After all, our *STR pass-through* equation must have the elements of a nonlinear backward-looking Phillips curve. As recommended by the anonymous referees, this specification is more relevant when estimating the pass-through to CPI inflation. This issue will be raised with more details in the revised version of the paper.

We do hope these responses do justice to the very helpful comments of the referee. Thanks again for your effort and best regards.