Abstract

This paper examines the degree of Exchange Rate Pass-Through (ERPT) to prices in 12 emerging markets in Asia, Latin America, and Central and Eastern Europe. Our results, based on three alternative vector autoregressive models, partly overturn the conventional wisdom that ERPT into both import and consumer prices is always higher in "emerging" than in "developed" countries.

For emerging markets with only one digit inflation (most notably the Asian countries), pass-through to import and consumer prices is found to be low and not very dissimilar from the levels of developed economies. The paper also finds robust evidence for a positive relationship between the degree of the ERPT and inflation, in line with Taylor's hypothesis once two outlier countries (Argentina and Turkey) are excluded from the analysis. Finally, the presence of a positive link between import openness and ERPT, while plausibl e theoretically, finds only weak empirical support.

Non-technical summary
Understanding the impact of exchange rate movements on prices is critical from a policy

Tóm tắt

Bài báo này khảo sát mức truyền dẫn tỷ giá hối đoái (mức chuyển qua của tỷ giá hối đoái) vào các mức giá ở 12 thị trường mới nổi thuộc châu Á, Mỹ Latinh, Trung và Đông Âu. Dựa trên ba mô hình vector tự hồi quy khác nhau, các kết quả của chúng tôi đã thay đổi phần nào quan niệm cho rằng hiệu ứng truyền dẫn tỷ giá hối đoái vào cả mức giá tiêu dùng và nhập khẩu ở các quốc gia "mới nổi" luôn cao hơn các quốc gia "phát triển".

Đối với các thị trường mới nổi chỉ có lạm phát một con số (đáng chú ý là các quốc gia châu Á), chúng tôi thấy rằng mức truyền dẫn vào giá cả nhập khẩu và tiêu dùng thấp và không khác nhiều so với các nền kinh tế phát triển. Bài báo cũng tìm được một bằng chứng vững chắc về mối quan hệ tích cực giữa mức ERPT và lạm phát, phù hợp với giả thuyết của Taylor khi đã loại trừ hai trường hợp ngoại lệ ra khỏi phép phân tích (Argentina và Thổ Nhĩ Kỳ). Cuối cùng, việc xét đến mối liên hệ tích cực giữa mở cửa nhập khẩu và ERPT trong khi có vẻ hợp lý về mặt lý thuyết lại ít phù hợp với thực tế.

Tóm tắt dễ hiểu
Kiến thức về tác động của các quá trình biến động tỷ giá hối đoái đến giá cả rất quan trọng khi nhìn từ

perspective in order to gauge the appropriate monetary policy response to currency movements.

Empirical studies have shown that movements in the exchange rate and prices do not go one to one in the short to medium run. An extensive theoretical literature, which has developed over the past three decades, has identified various expl anations why exchange-rate pass-through (ERPT) to import and consumer prices is incomplete. Empirical analyses have also provided evidence of considerable cross-country differences in the ERPT. A major argument in this respect was suggested by Taylor (2000), who put forward th e hypothesis that the responsiveness of prices to exchange rate fluctuations de pends positively on inflation.

This paper examines the degree of ERPT to prices in 12 emerging markets in Asia, Latin America, and Central and Eastern Europe. To achieve this, we employ a modelling strategy that was developed for advanced countries by McCa rthy (2000) and applied by Hahn (2003) to the euro area. We estimate vector autoregressive models, which include in the baseline case as

góc độ chính sách để có thể đánh giá chính sách tiền tệ phù hợp với những biến động tiền tệ.
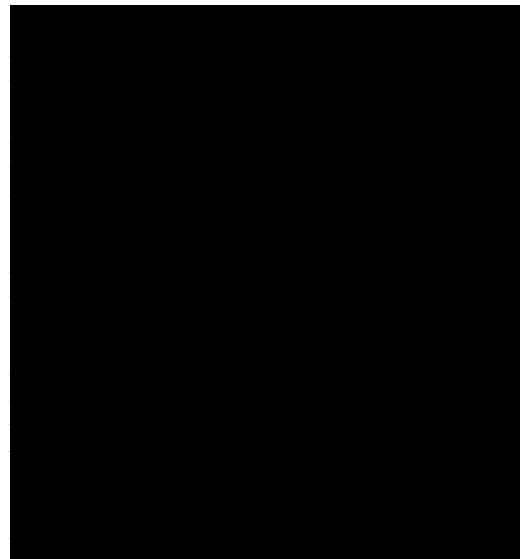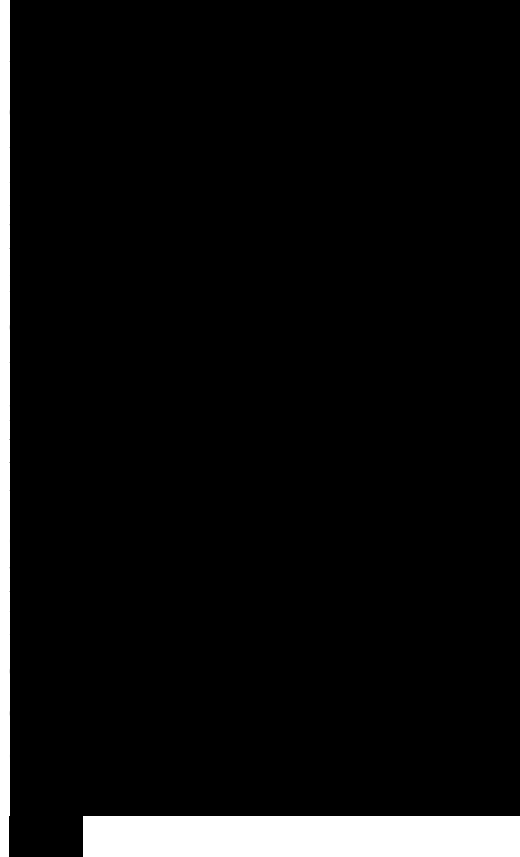
variables output, the exchange rate, import and consumer prices, a short-term interest rate, and oil prices. This vector autoregressive approach allows for the likely endogeneity between our variables of interest. Exchange rate shocks are id entified by appropriately ordering the variable of interest and applying a recursive identificati on scheme. As the ordering of the variables may matter, we conduct a sensitivity analysis for different alternative orderings of the variables. For comparison purposes, we also estimate comparable models for a benchmark of developed economies, namely the euro area, the United States and Japan.

Our results confirm that ERPT declines across the pricing chain, i.e. it is lower on consumer prices than on import prices. There is also evidence of low ERPT for developed economies, particularly in the case of the US and, for consumer prices, in Japan. In line with previous studies ERPT is found to be somewhat higher in the euro area than in the US, both for consumer and import prices. Our analysis also partly overturns the conventional wisdom that ERPT is always higher in "emerging"

than in "developed" countries. For emergi ng economies with one-digit level of inflation (most notably the Asian countries in our sample), ERPT is low and not very dissimilar from the levels prevailing in devel oped economies. More gene rally, the paper finds broad confirmation for a positive relationship between the degree of the ERPT and inflation, in line with Taylor's hypothesis. This result b ecomes apparent only after two outlier countries (Argentina and Turkey) are excluded, given the est imation difficulties associated with the severe macroeconomic instability experienced over the sample in these two countries. Finally, the presence of a positive link between import openness and ERPT, while plausibl e theoretically, finds only weak empirical support.

1. Introduction

Over the past two decades a large economic literature on exchange rate pass-through (ERPT) has developed. Starting from different stand-points, the empirical literature examines the role played by ERPT in small and large economies. Studies conducted for the case of developed countries include

Anderton (2003), Campa and Goldberg (2004), Campa et al. (2005), Gagnon and Ihrig (2004), Hahn (2003), Ihrig et al. (2006) and McCarthy (2000). There is also a burgeoning literature applied to emerging market economies, including cross-country comparisons as in Choudhri and Hakura (2006), Frankel et al. (2005) and Mihaljek et al. (2000).

Economists have traditionally made the simplifying assumption that the prices of tradable goods – once expressed in the same currency – are equalised across countries, i.e. that the purchasing-power parity condition (PPP) holds. Empirically, however, this assumption has found in general little support, at least in the case of small samples and in the short to medium run. In line with this evidence, the theoretical literature deve loped over the past two decades has provided different explanations why the ERPT is incomple te. In his seminal paper, Dornbusch (1987) justifies incomplete pass-through as arising from fi rms that operate in a market characterised by imperfect competition and adjust their mark-up (and not only prices) in response to an exchange rate

shock. Burstein et al. (2003) instead emphasise the role of (non-traded) domestic inputs in the chain of distribution of tradable goods. Bu rstein et al. (2005) point to the measurement problems in CPI, which ignores the quality adjustment of tradable goods large adjustment in the exchange rate. Another line of reasoning stresses more the role that monetary and fiscal authorities play, by partly offsetting the impact of changes in the exchange rate on prices (Gagnon and Ihrig, 2004). Devereux and Engel (2001) and Bacchetta and van Wincoop (2003) explore instead the role of local currency pricing in reducing the degree of ERPT.

Corroborating these various theoretical approaches, the empirical literature for both advanced and emerging economies has found evidence of incomplete ERPT. These studies also find evidence of considerable differences across countri es, leading naturally to the question of what are the underlying determinants of pass-through. Taylor (2000) in particular has put forward the hypothesis that the responsiveness of prices to exchange rate fluctuations depends positively on inflation.

The rationale for this involves a positive correlation between the level and persistence of inflation, coupled with a link between inflation persistence and pass-through. The latter link can be expressed as follows: The more persistent inflation is, the less exchange rate movements are perceived to be transitory and the more firms might respond via price-adjustments.

The evidence across different studies appears overall supportive of the Taylor hypothesis. The positive relationship between the degree of pass-th rough and inflation appears to emerge morestrongly, however, when emerging markets are incl uded in the sample period under review (see in particular the panel data evidence in Choudhri and Hakura, 2006). This may be not surprising, as the theoretical argumentation of Taylor becomes more meaningful for higher rates of inflation.

Another important determinant of ERPT, from a theoretical standpoint is the degree of trade openness of a country. The most immediate connec tion between the two variables is positive: the more a country is open, the more movements in exchange rates are transmitted via import
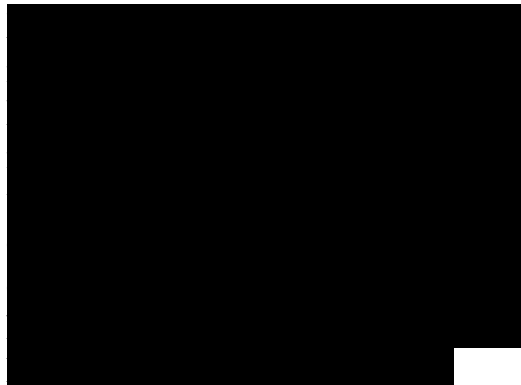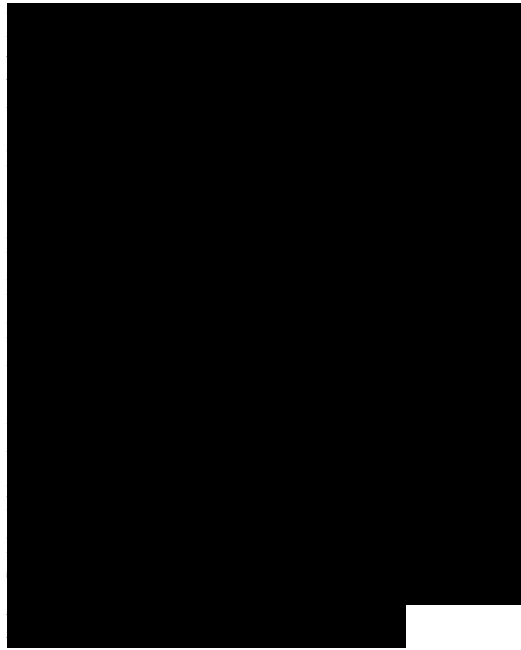
prices into CPI changes. However, the picture becomes more complex once we take into account that inflation could be negatively correlated with openness, as empi rically found by Romer (1993).

This gives rise to an indirect channel, whereb y openness is negatively correlated with inflation and, taking into account Taylor's hypothesis, the degree of pass-through. The direct and indirect channels go in opposite directions and the overall sign of the correlation between pass-through and openness can thus be either positive or negative.

The present paper reviews the results from the lite rature, exploring the magnitude of the ERPT and the differences across countries by estimating vector autoregressive (VAR) models for emerging market countries and for the main industrialised economies, i.e. the euro area, the United States and Japan which are used as a cont rol group. A simultaneous equation approach is used in order to allow for potential and highly likely endogeneity between the variables of interest. Simply ignoring such simultaneity, as is often done in single equation approaches, would result in simultaneous
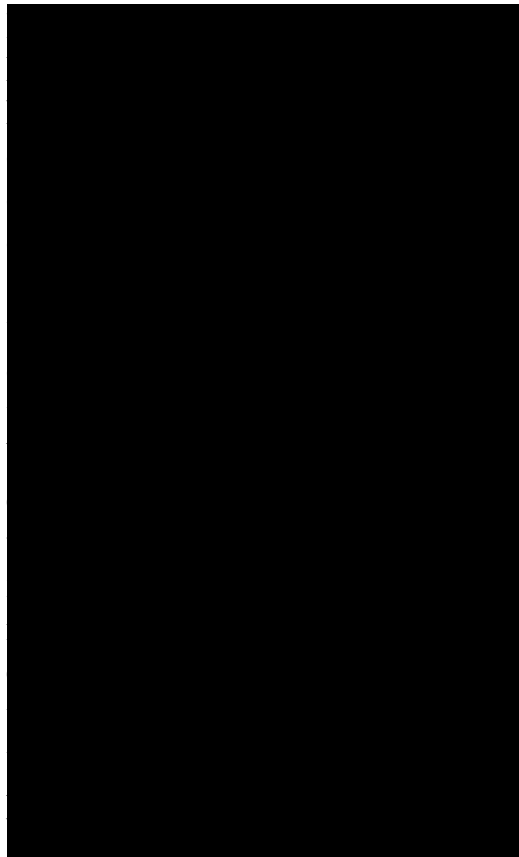
equation bias. The chosen modelling framework is, moreover, appealing as it allows one to trace out the dynamic responses of variables to exogenous shocks over time. The literature so far has estimated either single e quation models or systems of equations for one specific country, or else set up single equation models for a larger set of countries (e.g. Choudhri and Hakura, 2006, and Mihaljek et al., 2000). In this study instead, we apply our system approach to a considerable number of countri es in the world's three main emerging market regions, namely, Asia, Latin America, and Central and Eastern Europe. At the same time, we use the same approach to the three major industr ial economies, which ensures comparability across the country results. By estimating each country model over the longest possible time horizon, we moreover aim at the highest possible degree of precision of the pass-through estimates for each country. In this respect, an important ingredient to the analysis has been the creation of a suitable and comparable database for each country at the quarterly frequency, which represents a major challenge given the data availa bility and quality for

. Xét trên phương diện này, một thành phần quan trọng trong quá trình phân tích là sự xây dựng các cơ sở dữ liệu so sánh và thích hợp cho mỗi quốc gia với tần suất hàng quý, đó là một thách thức lớn vì nó đòi hỏi phải có sẵn dữ liệu và nắm bắt được những điểm

emerging market countries. This has also helped us meeting the requirements of a system approach based on a relatively high number of variables in order to allow for sufficiently rich dynamics and to avoid omitted variable bias.	đặc trưng của các quốc gia mới nổi. Điều này cũng giúp chúng ta đáp ứng các yêu cầu của một phương pháp tiếp cận hệ thống dựa trên một số lượng biến tương đối lớn cho phép những quá trình động học phong phú hơn và tránh sai lệch do bỏ sót biến.	

Sau đó chúng tôi sẽ sử dụng kết quả thu được từ quốc gia của chúng tôi để kiểm chứng nhận định rằng ERPT ở các thị trường mới nổi cao hơn so với các nền kinh tế công nghiệp hóa, đồng thời so sánh tương quan các kiểu hiệu ứng truyền dẫn của tỷ giá vào lạm phát ở các thị trường này theo quan điểm của McCarthy (2000) và Choudhri, Hakura (2006). ERPT ở các thị trường mới nổi cao hay thấp có ý nghĩa quyết định đối với cân bằng thương mại cũng như lựa chọn cơ chế tỷ giá hối đoái của một quốc gia. ████████████████████

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$$Y_t = c + \sum_{i=1}^{p} \Phi_i Y_{t-1} + \varepsilon_t \qquad (1)$$

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Tuy nhiên, cần phải nói rằng dù ước tính theo mức độ của các biến hay VECM thì cũng không hoàn toàn không có

vấn đề (xem, ví dụ Favero, 2001). Với sự xuất hiện của cointegration, phương pháp đầu tiên (ước tính theo mức độ) sẽ gặp phải