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Globalisation and the Decoupling of Inflation from Domestic Labour Costs

Abstract

We provide novel systematic cross-country evidence that the link between domestic labour markets and CPI inflation has weakened considerably in advanced economies during recent decades. The central estimate is that the short-run pass-through from domestic labour cost changes to core CPI inflation decreased from 0.25 in the 1980s to just 0.02 in the 2010s, while the long-run pass-through fell from 0.36 to 0.03, with the estimates in the 2010s no longer significant. We show that the timing of the collapse in the pass-through coincides with a steep increase in import penetration from a group of major manufacturing EMEs around the turn of the millennium, which signals increased competition and market contestability.

JEL-Codes: E310, E500, F100, F600, J300.

Keywords: competition, globalisation, import penetration, inflation, labour market, pass-through, wage.

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1. Introduction

Labour market developments are a central input for monetary policy decisions. In particular, wage pressures and the extent to which these could translate into more generalised price increases are typically monitored on a continuous basis. This is partly because wage–price spirals have historically led to adverse inflationary outcomes.

In this paper we focus on the link between domestic labour markets and CPI inflation, as well as the main factors that affect it. We provide novel cross-country evidence on the evolution of the pass-through of variations in domestic labour costs to inflation. We do so by resorting to dynamic panel estimations which allow for heterogeneity in coefficients across countries.

Overall, we find that the link between domestic unit labour cost growth and inflation has weakened considerably in advanced economies during recent decades. The central estimate is that the short-run pass-through from domestic labour cost variations to core CPI inflation decreased from a significant value of 0.25 in the 1980s to an insignificant value of just 0.02 in the 2010s. Similarly, the long-run pass-through fell from 0.36 in the 1980s to an insignificant value of 0.03 in the 2010s. We show that the timing of the collapse in the pass-through coincides with a steep increase in import penetration from a group of major manufacturing EMEs around the turn of the millennium, which implied increased competition and market contestability for advanced economies. Further, while lower inflation levels might have contributed to lower domestic ULC–CPI pass-throughs, we find that globalisation and trade openness have been the dominant factors behind the relative decoupling.

Our paper is most closely related to the following evolving literature, which typically has focused on specific economies. Peneva and Rudd (2017) already found that the pass-through of labour costs to prices in the United States has fallen over the past several decades. For compensation measures where there was still evidence of pass-through, the variations had essentially no material effect on price inflation in the most recent period. Also Heise *et al* (2020) find that the pass-through from wages to prices in the goods-producing sector in the United States has fallen since the early 2000s, and that this fall has been an important source of low inflation. Similarly, Ascari and Fosso (2021) find that the pass-through from US wages to inflation has fallen. A recent study by Bobeica *et al* (2019) concluded that the pass-through of labour costs to inflation in the euro area has been higher in periods of high inflation than in periods of low inflation. Our contribution to this literature is that we take a cross-country perspective, and that we show the key role that globalisation has had in weakening the link between domestic labour markets and inflation measures. Our paper is also closely related, and takes inspiration from Auer *et al* (2013), who show that import competition from low-wage emerging economies strongly reduced producer prices in a number of European countries.

The paper proceeds as follows. Section 2 presents the econometric methodology. Section 3 presents the estimates of the pass-through from domestic labour cost variation to inflation, and Section 4 analyses the key factors driving the reduction in pass-throughs. Robustness results are presented in Section 5, and Section 6 concludes.

2. Econometric Methodology

To analyse the pass-through from domestic labour markets to inflation, we examine data from 21 advanced economies.[3] This selection was based exclusively on data availability on core inflation, earnings and unit labour costs. Data sources are listed in the Appendix.

We use the mean group estimation method for dynamic heterogeneous panels of Pesaran and Smith (1995) in estimating the expression

$$\Delta p_{i,t} = (\rho + \mu_{1i}) \cdot \Delta p_{i,t-1} + (\lambda + \mu_{2i}) \cdot \Delta c_{i,t} + \alpha_i + \varepsilon_{i,t}, \quad (1)$$

where $\Delta p_{i,t}$ denotes inflation and $\Delta c_{i,t}$ unit labour cost growth in country *i* and year *t*. The country-specific components of the slope coefficients (i.e. μ_{1i} and μ_{2i}) have zero means and constant covariances; α_i are country fixed effects, and $\varepsilon_{i,t}$ is the error term. Our key interest lies in the estimates of λ, which captures average effects, and in the country-specific values $\lambda_i = \lambda + \mu_{2i}$. These capture the extent of short-term pass-through from domestic labour cost growth to inflation. High λs would indicate a tight connection between domestic labour markets and local prices. Additionally, we also examine the estimates of $\lambda/(1-\rho)$, which reflect the average pass-through of domestic labour costs to prices in the long run.

The rationale for the choice of Pesaran and Smith's heterogeneous slope model is that it is flexible enough to allow labour market pass-throughs to CPI inflation to differ between countries. This is key because the weight of domestic factors in goods and services' prices is bound to differ across countries. Further, when the slope coefficients vary across groups, dynamic panel models estimated with fixed effects, instrumental variables or GMM can produce inconsistent estimates (Pesaran and Smith (1995) and Pesaran, Shin and Smith (1999)).

3. A Weakening Link

The results of the estimated equation (1) for the effects of changes in unit labour costs on headline CPI inflation are presented in Table 1. We present full sample estimates, as well as decade-specific estimates. We can see that the coefficient for changes in unit labour costs is significantly positive in the 1980s, at 0.276, but falls over time to an insignificant value of -0.002 in the 2010s. In other words, domestic labour costs have become much less important as a driver of headline CPI inflation across countries. The sharpest decline occurs around the turn of the millennium.

[3] They are Austria, Australia, Belgium, Canada, Czechia, Estonia, the euro area, Finland, France, Germany, Ireland, Italy, Japan, Luxemburg, the Netherlands, Portugal, South Korea, Sweden, Switzerland, the United Kingdom and the United States.

CPI vs Unit Labour Costs **Table 1**

D.V.: Δ ln CPI

	full sample	1980s	1990s	2000s	2010s
lagged Δ ln CPI	0.507***	0.297***	0.357***	-0.169*	0.385***
	0.041	0.072	0.071	0.088	0.060
Δ ln ULC	0.124***	0.276***	0.247***	0.064	-0.002
	0.033	0.075	0.052	0.061	0.063
Constant	0.007***	0.011***	0.007***	0.023***	0.008***
	0.001	0.003	0.001	0.003	0.001
LT effect					
Δ ln ULC	0.252***	0.394***	0.385***	0.055	-0.003
	0.070	0.114	0.091	0.052	0.102
observations	735	108	186	210	210
number of countries	21	14	21	21	21
RMSE (σ)	0.0125	0.0113	0.0096	0.0105	0.0081
$\chi 2$	167.87***	30.73***	48.21***	4.83*	41.79***
Wald test *p-value*	0.000	0.000	0.000	0.089	0.000

Note: Pesaran and Smith (1995) mean group estimation based on yearly data between 1980 and 2020. Robust standard errors are shown below coefficients. ***/**/* denote statistical significance at 1/5/10% confidence level.

We next turn to core CPI inflation, which excludes the most volatile components such as oil. The results of equation (1) for the effects of changes in unit labour costs on core CPI inflation are shown in Table 2. What is clear, is that also for core CPI inflation the coefficient on changes in unit labour costs is significantly positive in the 1980s, at 0.246, dropping sharply after the turn of the millennium to reach an insignificant value of 0.024 in the 2010s. The evolution of the pass-through coefficient to core inflation is also plotted in Figure 1, with the respective confidence intervals.

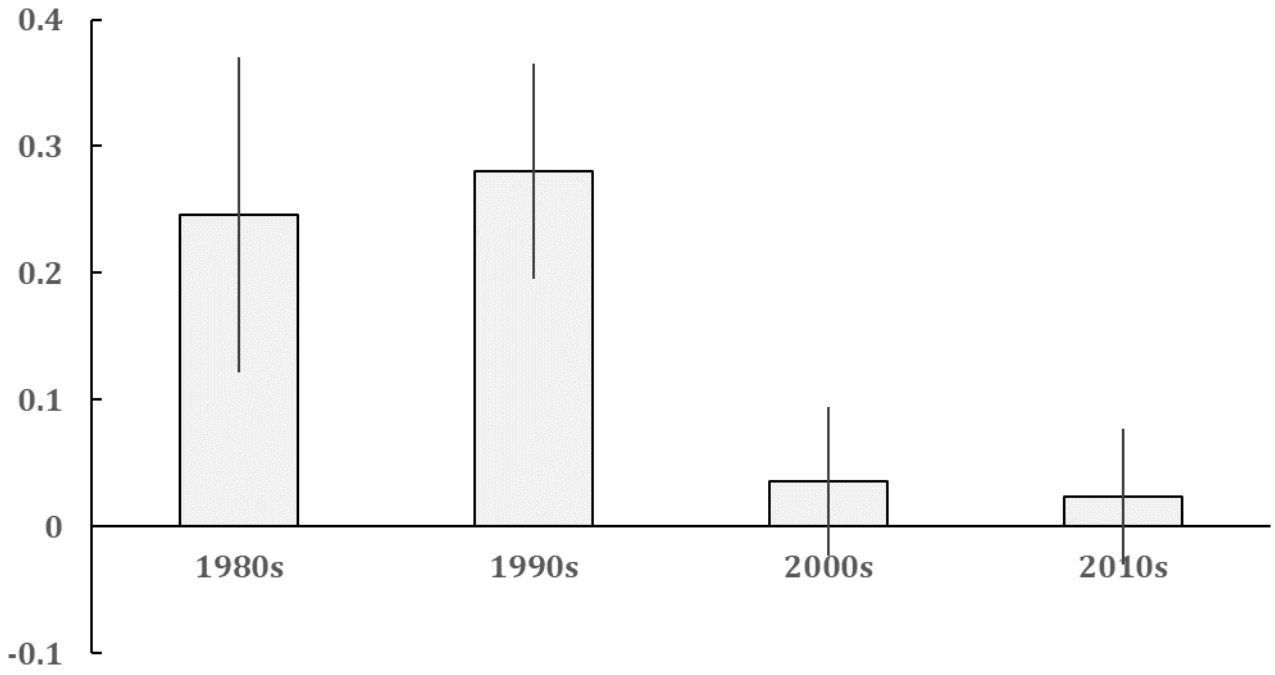
Core CPI vs Unit Labour Costs **Table 2**

D.V.: Δ ln Core CPI

	full sample	1980s	1990s	2000s	2010s
lagged Δ ln Core CPI	0.588***	0.319***	0.411***	0.081	0.278***
	0.033	0.082	0.075	0.069	0.075
Δ ln ULC	0.143***	0.246***	0.280***	0.036	0.024
	0.022	0.075	0.051	0.035	0.032
Constant	0.004***	0.018***	0.005***	0.014***	0.008***
	0.001	0.005	0.001	0.002	0.001
LT effect					
Δ ln ULC	0.348***	0.361***	0.476***	0.039	0.034
	0.060	0.169	0.105	0.038	0.045
observations	714	100	168	210	210
number of countries	21	13	18	21	21
RMSE (σ)	0.0107	0.0111	0.0094	0.0093	0.0047
$\chi 2$	368.99***	25.77***	60.90***	2.41	14.33***
Wald test *p-value*	0.000	0.000	0.000	0.299	0.001

Note: Pesaran and Smith (1995) mean group estimation based on yearly data between 1980 and 2020. Robust standard errors are shown below coefficients. ***/**/* denote statistical significance at 1/5/10% confidence level.

Fig. 1 – Labour market pass-through coefficients by decade
(for core inflation, with 90% confidence intervals)



Importantly, the same result holds when the output gap is included in the regression as a control variable (see Table 3).[4] Appendix Table A1 shows that a similar conclusion follows if the unemployment gap is used as control instead. Further, we find that the result that the pass-through coefficient on changes in unit labour costs to core inflation falls sharply between the 1980s and the 2010s also goes through when replacing changes in unit labour costs by hourly earnings growth (see Table 4). What this indicates is that the relative decoupling is not driven by changing labour costs on the side of the employer.

[4] We start the regression of the model with the output gap in the 1990s rather than in the 1980s due to data availability issues.

Models with output gap **Table 3**

D.V.: Δ ln Core CPI

	full sample	1990s	2000s	2010s
lagged Δ ln Core CPI	0.560***	0.442***	0.151	0.235***
	0.039	0.090	0.097	0.087
Δ ln ULC	0.095***	0.200***	-0.015	0.001
	0.026	0.056	0.019	0.034
output gap	0.001***	0.002***	0.002	0.001***
	0.000	0.001	0.000	0.000
Constant	0.007***	0.009***	0.010	0.011***
	0.001	0.002	0.003	0.002
LT effect				
Δ ln ULC	0.216***	0.357***	-0.018	0.002
	0.092	0.116	0.022	0.044
observations	655	154	209	210
number of countries	21	16	21	21
RMSE (σ)	0.0092	0.0092	0.0056	0.0043
$\chi 2$	296.94***	46.49***	33.67***	18.07***
Wald test *p-value*	0.000	0.000	0.000	0.000

Note: Pesaran and Smith (1995) mean group estimation based on yearly data between 1980 and 2020. Robust standard errors are shown below coefficients. ***/**/* denote statistical significance at 1/5/10% confidence level.

Core CPI vs Earnings **Table 4**

D.V.: Δ ln Core CPI

	full sample	1980s	1990s	2000s	2010s
lagged Δ ln Core CPI	0.606***	0.398***	0.511***	0.114	0.309***
	0.035	0.106	0.068	0.092	0.092
Δ ln Earnings / hour	0.136***	0.207**	0.162***	0.030	0.060**
	0.026	0.081	0.037	0.041	0.029
Constant	0.003**	0.013	0.004*	0.010***	0.007***
	0.001	0.009	0.002	0.004	0.002
LT effect					
Δ ln Earnings / hour	0.347***	0.344**	0.332***	0.034	0.087**
	0.074	0.147	0.088	0.046	0.044
observations	582	88	136	169	170
number of countries	17	11	14	17	17
RMSE (σ)	0.0109	0.0116	0.0104	0.0094	0.0046
$\chi 2$	333.68***	20.68***	76.72***	2.07	15.62***
Wald test *p-value*	0.000	0.000	0.000	0.355	0.000

Note: Pesaran and Smith (1995) mean group estimation based on yearly data between 1980 and 2020. Robust standard errors are shown below coefficients. ***/**/* denote statistical significance at 1/5/10% confidence level.

4. Manufacturing EMEs Imports and ULC–CPI Pass-Throughs

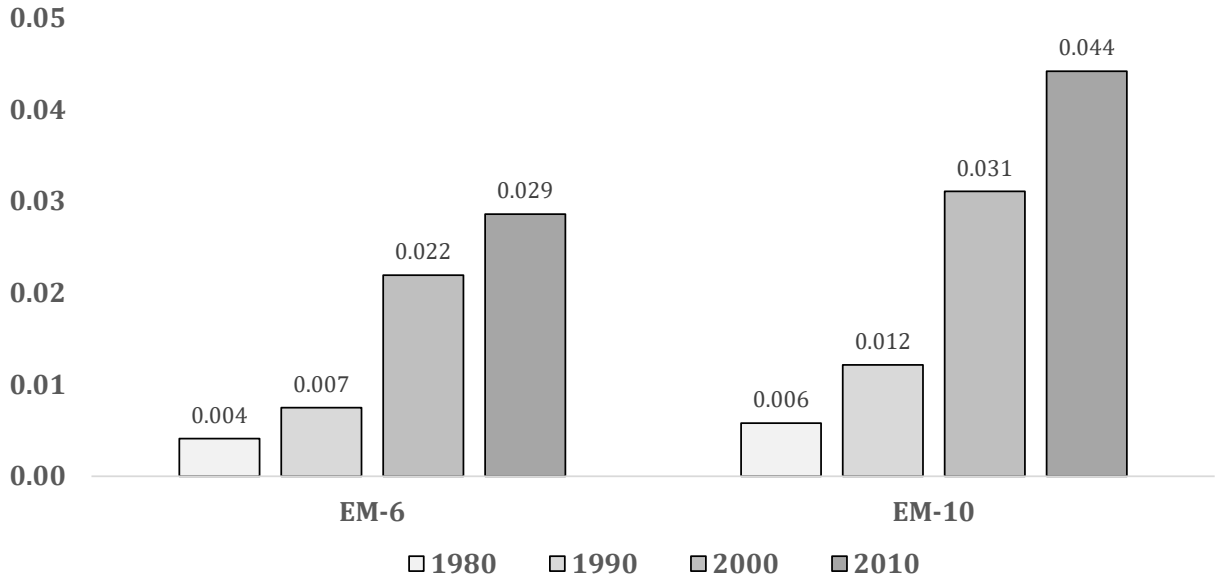
The key question is what factors brought about the striking decoupling of domestic labour costs from CPI inflation in advanced economies?

Perhaps the most salient development during this time frame was the rapid integration of manufacturing EMEs, most notably from Asia as well as Mexico, into the global economy and the rapid increase of their international trade flows that followed.

Such integration exposed advanced economy producers to credible import competition from lower wage countries, with profound impacts on pricing. Auer *et al* (2013) for instance find that producer prices in Europe decreased by 3% for each percentage point of the European market that was captured by six developing manufacturing exporters.

The manufacturing EME import penetration measure we use is defined as bilateral imports from the sum of the six countries used by Auer *et al* (2013) (i.e. China, India, Malaysia, the Philippines, Thailand and Mexico) divided by aggregate domestic demand in the advanced economy.[5,6] The left side of Figure 2 shows its average evolution across advanced economies by decade. On the right side, we also show the same measure for the EM-10, which we define as the EM-6 plus Czechia, Hungary, Poland and Turkey. Even towards the end of the sample, all EM-6 countries had average wage levels that were below 25% of those in the United States.

Fig. 2 – Manufacturing EMEs' Import Penetration
(median values for AEs)



Note: Imports from Manufacturing EMEs / Domestic Demand

Median manufacturing EME import penetration in advanced economies grew from just 0.4% in the 1980s to 2.9% in the 2010s for the EM-6, and from 0.6% to 4.4% if measured for the EM-10. Clearly, the largest jump occurred at the turn of the millennium, with the accession of China to the WTO in 2001. The above increase in presence is likely to have impacted the pricing power of producers in the goods sector in advanced economies directly, through actual loss of market share, and indirectly, through increased market contestability.

To test whether the greater openness of advanced economies has impacted the pass-through from domestic labour costs to CPI inflation, we regress the estimated $\lambda_{i,t}$ for each advanced economy i in our sample during decade t against the respective KOF

[5] Bilateral trade flows are taken from the UN Comtrade database.
[6] That is, output + (imports – exports).

globalisation index (which is a broad measure of the degree of integration into the world economy), and against the EM-6 and EM-10 import penetration shares, according to

$$\lambda_{i,t} = \gamma \cdot globalisation_{i,t} + \alpha_i + \varepsilon_{i,t}, \qquad (2)$$

where $globalisation_{i,t}$ denotes the KOF globalisation index (or the EM-6 and EM-10 import penetration shares) in country *i* and decade *t*. The results of this exercise can be seen in Table 5. In all six specifications, greater openness (corresponding to higher indices or shares) is associated with significantly lower estimated λ_is. The *p-values* of the variables of interest are always below 0.05.[7]

The degree of pass-through vs LWC import penetration **Table 5**

D.V.: Estimated pass-through coefficient (ULC → CPI)						
	(I)	(II)	(III)	(IV)	(V)	(VI)
constant	-0.099	-0.255	-0.304*	-0.495**	-0.427**	-0.520**
	0.073	0.156	0.162	0.229	0.166	0.234
ln (globalisation index)	-1.108***	-1.779**				
	0.362	0.670				
ln (EM-6 import penetration)			-0.108***	-0.153**		
			0.041	0.054		
ln (EM-10 import penetration)					-0.150***	-0.174**
					0.046	0.060
observations	58	58	58	58	58	58
country fixed effects	no	yes	no	yes	no	yes
R2	0.177		0.123		0.203	
R2 within		0.246		0.197		0.237
R2 between		0.176		0.005		0.124

Note: Robust standard errors are shown below coefficients. ***/**/* denote statistical significance at 1/5/10% confidence level.

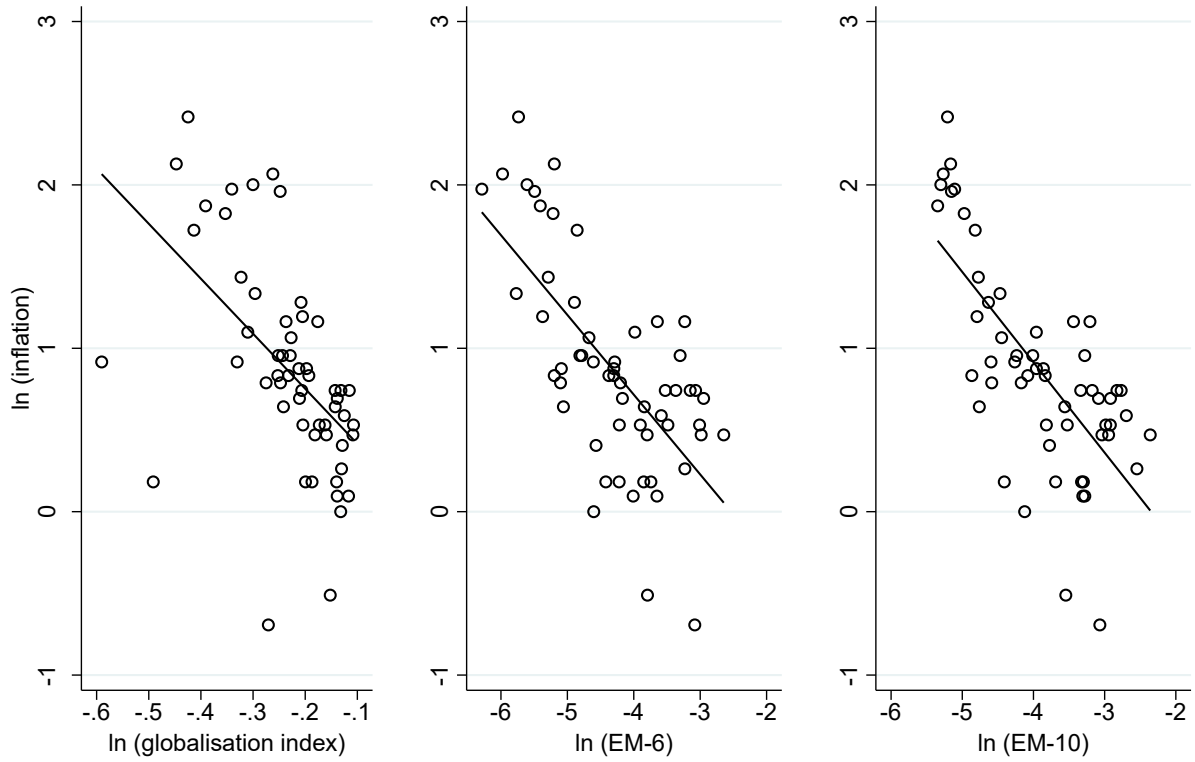
5. Robustness of Results: Machine Learning and Interaction Terms

5.1 – Regression Decision Tree

Another potential variable that could affect the extent of pass-through from domestic labour costs to core CPI inflation is the level of inflation. Widespread adoption of inflation targeting regimes in advanced economies has led to lower inflation, lower inflation expectations and generally a much better anchoring of inflation around central banks' targets. As it turns out, the average level of inflation in AEs is highly correlated with the degree of globalisation and import penetration from manufacturing EMEs. This can be seen in Figure 3, for all three alternative indicators of openness that we use.

[7] All KOF globalisation indices and EME import penetration factors that were used are listed in Table A2. The analysis in this section does not include Czechia, Estonia, Luxemburg and South Korea.

Figure 3 - Correlates of CPI Inflation



Note: Based on decade averages for advanced economies

Estimating which share of the long-term fall in estimated λs is due to the inflation level per se, and which to increased competition from EMEs would in practice not be feasible by standard regression methods for the international panel in question. Regression estimates would not properly partition the contribution of individual factors if EME import penetration and inflation were included together as determinants of λs. Since the number of observations for AEs is small (we have 58 estimates of λs) one would not be able to get around the problem of multicollinearity, which is known to confound estimates of individual effects.[8] A much larger sample size would be required for multicollinearity not to be an issue.

Machine learning provides an alternative way for assessing the relative importance of EME import penetration and the inflation level for ULC–core CPI pass-throughs. More specifically we can use an entirely agnostic regression decision tree to fit our variable of interest (the estimated λ for each country and decade). Essentially, the computer algorithm grows a decision tree mechanically using the mean square error as the splitting criterion at each node (see Breiman *et al* (1984)).[9] Once the decision tree has been grown,

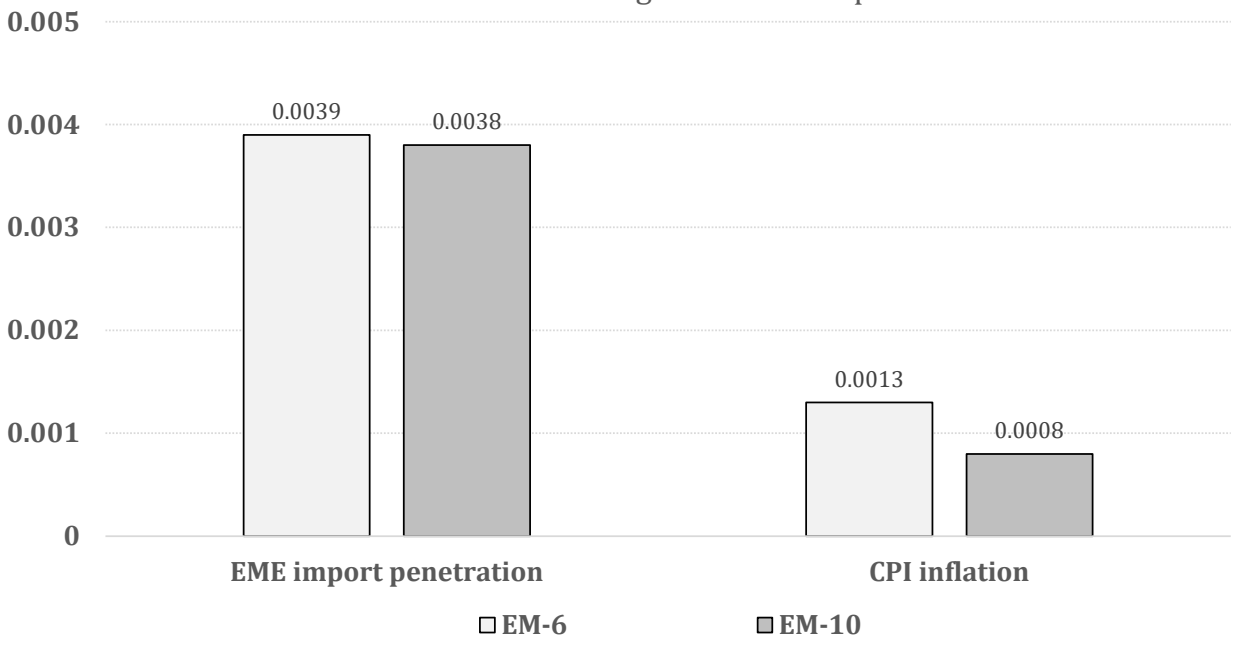
[8] Indeed, due to the high correlation, EME import penetration might even be interpreted as an instrument for the inflation level.

[9] The regression tree method finds that the optimal first split of the data is based on whether EM-6 import penetration was above or below 0.00765 (for the case when EM-6 is used). It then continues with further splits of the data for the subsequent nodes.

we can estimate the importance of each individual predictor. This step is based on the average difference between mean squared errors (MSEs) between the parent nodes and the total MSEs for the two splits.

Figure 4 shows predictor importance factors derived from regression decision trees. In one case, the algorithm to predict estimated λs is fed with EM-6 import penetration and average CPI inflation over 10 years, and in the other with EM-10 import penetration and average inflation. In both cases, the metric indicates that EME import penetration is three or more times as important as the level of inflation in predicting the extent of pass-through of labour costs to CPI inflation.[10]

Figure 4 – Regression decision tree:
ULC–Core CPI Pass-Through Predictor Importance



5.2 – Interaction Terms

As a further robustness test, we also introduce an interaction term between unit labour cost variation and globalisation directly into the original panel regression,

$$\Delta p_{i,t} = (\rho + \mu_{1i}) \cdot \Delta p_{i,t-1} + (\lambda + \mu_{2i}) \cdot \Delta c_{i,t} + (\beta + \eta_i) \cdot globalisation_{i,t} +$$
$$+ (\gamma + \kappa_i) \cdot \Delta c_{i,t} \cdot globalisation_{i,t} + \alpha_i + \varepsilon_{i,t}, \qquad (3)$$

where $globalisation_{i,t}$ denotes the KOF globalisation index in country *i* and year *t*. This is an alternate approach to the second stage regressions presented above to determine whether globalisation affects the pass-through of unit labour costs to inflation. These estimation

[10] The Code and data are available upon request.

results are presented in Table 6 for both headline and core CPI inflation. The coefficient on the interaction term between unit labour cost growth and globalisation is significantly negative for both headline and core inflation, and of roughly similar magnitude. This implies that the pass-through of unit labour cost growth to both headline and core inflation is higher at lower levels of globalisation, which is consistent with the results presented above. We also find that the coefficient on unit labour costs remains positive and significant.

Headline and core CPI vs Unit Labour Costs, with interaction term with globalisation **Table 6**

D.V.: Δ ln CPI

	headline CPI inflation	core CPI inflation
lagged Δ ln CPI	0.327***	0.360***
	0.043	0.049
Δ ln ULC	1.996***	1.572***
	0.461	0.447
globalisation	-0.0003	-0.001***
	0.0002	0.0002
globalisation* Δ ln ULC	-0.023***	-0.018***
	0.006	0.005
Constant	0.031*	0.056***
	0.017	0.013
observations	651	651
number of countries	20	20
RMSE (σ)	0.0113	0.0098
$\chi 2$	95.54	91.35
Wald test *p-value*	0.000	0.000

Note: Pesaran and Smith (1995) mean group estimation based on yearly data between 1980 and 2020. Robust standard errors are shown below coefficients. ***/**/* denote statistical significance at 1/5/10% confidence level.

Further, we also introduce an interaction term between unit labour cost growth and inflation lagged by two years, $\Delta p_{i,t-2}$, directly in the panel regression,

$$\Delta p_{i,t} = (\rho + \mu_{1i}) \cdot \Delta p_{i,t-1} + (\lambda + \mu_{2i}) \cdot \Delta c_{i,t} + (\tau + \vartheta_i)\Delta c_{i,t} \cdot \Delta p_{i,t-2} + \alpha_i + \varepsilon_{i,t}, \quad (4)$$

In the interaction term, inflation is lagged by two years in order to reduce endogeneity issues. This is an alternate approach to the second stage regressions presented above to determine whether the inflation environment affects the pass-through of unit labour costs to inflation.[11] The results of this exercise are presented in Table 7 for both headline and core CPI inflation. We find that the coefficient on the interaction term between unit labour cost growth and inflation lagged by two years is significantly positive for both headline and core inflation, and of similar magnitude. This suggests that the pass-through of unit labour cost growth to both headline and core inflation is larger in higher inflation environments. These results are broadly in line with Bobeica et al. (2019), who find that the pass-through of labour costs to inflation is higher in periods of high inflation than in periods of low inflation in the case of the euro area.

[11] Our approach is similar to the one used in Jasova *et al* (2019) to determine whether the pass-through of exchange rate changes to inflation depends on the inflation environment.

Headline and core CPI vs Unit Labour Costs, with interaction term with lagged inflation **Table 7**

D.V.: Δ ln CPI

	headline CPI inflation	core CPI inflation
lagged Δ ln CPI	0.403***	0.476***
	0.043	0.044
Δ ln ULC	0.057	0.042
	0.038	0.031
Δ ln CPI_{t-2}* Δ ln ULC	3.149**	3.910***
	1.500	1.368
constant	0.008***	0.006***
	0.001	0.001
observations	702	698
number of countries	21	21
RMSE (σ)	0.0116	0.0100
χ2	91.42	127.71
Wald test *p-value*	0.000	0.000

Note: Pesaran and Smith (1995) mean group estimation based on yearly data between 1980 and 2020. Robust standard errors are shown below coefficients. ***/**/* denote statistical significance at 1/5/10% confidence level.

Next, we introduce both the interaction terms, that is of unit labour cost growth with globalisation and with inflation lagged by two years, together in a single panel regression. This is to check which variable affects the pass-through of unit labour cost growth to inflation more,

$$\Delta p_{i,t} = (\rho + \mu_{1i}) \cdot \Delta p_{i,t-1} + (\lambda + \mu_{2i}) \cdot \Delta c_{i,t} + (\beta + \eta_i) \cdot globalisation_{i,t} +$$

$$+ (\gamma + \kappa_i) \cdot \Delta c_{i,t} \cdot globalisation_{i,t} + (\tau + \vartheta_i) \Delta c_{i,t} \cdot \Delta p_{i,t-2} + \alpha_i + \varepsilon_{i,t}, \quad (5)$$

The results are presented in Table 8. We find that the coefficient on the interaction term between unit labour cost growth and globalisation remains significantly positive for both headline and core inflation, and of similar magnitude as when the interaction term with globalisation is included on its own (see Table 6). By contrast, the coefficient on the interaction term between unit labour cost growth and inflation lagged by two years becomes statistically insignificant. This suggests that the pass-through of unit labour cost growth to both headline and core inflation is affected more by globalisation than by the inflation environment. This result is consistent with the result based on the regression decision tree analysis presented above.

Headline and core CPI vs Unit Labour Costs, with interaction terms with globalisation and lagged inflation **Table 8**

D.V.: Δ ln CPI

	headline CPI inflation	core CPI inflation
lagged Δ ln CPI	0.281***	0.315***
	0.039	0.044
Δ ln ULC	2.379***	1.528***
	0.5080	0.5720
globalisation	-0.0003	-0.0004
	0.0002	0.0002
globalisation* Δ ln ULC	-0.027***	-0.017**
	0.0060	0.0070
Δ ln CPI_{t-2}* Δ ln ULC	-1.485	0.298
	1.180	1.705
constant	0.032*	0.046***
	0.017	0.017
observations	639	636
number of countries	20	20
RMSE (σ)	0.0107	0.0092
$\chi 2$	95.62	69.88
Wald test *p-value*	0.000	0.000

Note: Pesaran and Smith (1995) mean group estimation based on yearly data between 1980 and 2020. Robust standard errors are shown below coefficients. ***/**/* denote statistical significance at 1/5/10% confidence level.

6. Concluding Remarks

This paper examined the link between domestic labour markets and CPI inflation across advanced economies. It provides novel systematic cross-country evidence of the pass-through of domestic labour cost variations to CPI inflation, using dynamic panel estimation which allows for heterogeneity in coefficients across countries.

We find that the link between domestic unit labour cost growth and inflation has weakened considerably during recent decades. The short-run pass-through from domestic labour cost variation to core CPI inflation decreased from a significant value of 0.25 in the 1980s to an insignificant value of just 0.02 in the 2010s. Similarly, the long-run pass-through fell from a significant value of 0.36 in the 1980s to an insignificant value of 0.03 in the 2010s. Similar reductions are found for other measures of inflation. We show that the timing of the collapse in the pass-through coincides with a steep increase in import penetration from a group of major manufacturing EMEs around the turn of the millennium, which implies increased competition and market contestability in advanced economies.

Two alternative empirical tests reveal that globalisation has been the dominant factor explaining the decline in pass-through of domestic labour cost variations to inflation. While the lower level of inflation may also have contributed to the decline, its contribution is overshadowed by that of greater economic openness. Overall, our results suggest that an excessive focus on domestic labour markets has become less appropriate for gauging inflation pressures in a globalised economy.

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Appendix: Data Sources

Our panel consists of 21 advanced economies (listed in footnote 3). We use data on unit labour costs and compensation per hour from the OECD. Data on CPI headline inflation is taken from Datastream and the BIS. Data on CPI core inflation is from the OECD, national data and the BIS. Estimates of the output gap and the unemployment gap (defined as the unemployment rate minus the NAIRU) are taken from the OECD.

We also rely on data on import penetration from a group of 10 representative manufacturing based emerging market economies (EMEs) from UN Comtrade.[12] As a measure of globalisation we use the comprehensive KOF globalisation index, which quantifies the economic, social and political dimensions of globalisation (Dreher (2006); Gygli *et al* (2019)).

[12] They are China, Czechia, Hungary, India, Mexico, Malaysia, the Philippines, Poland, Thailand and Turkey.

Models with unemployment gap **Table A1**

D.V.: Δ ln Core CPI

	full sample	1990s	2000s	2010s
Δ ln Core CPI	0.611***	0.463***	0.120	0.182***
	0.035	0.084	0.082	0.066
Δ ln ULC	0.085***	0.184***	-0.048**	0.028
	0.026	0.052	0.019	0.032
unemployment gap	-0.003***	-0.002*	-0.007***	-0.002***
	0.001	0.001	0.002	0.001
Constant	0.006***	0.009***	0.013***	0.010***
	0.001	0.002	0.002	0.002
LT effect				
Δ ln ULC	0.220***	0.344***	-0.055*	0.034
	0.071	0.111	0.022	0.039
observations	665	164	209	210
number of countries	21	17	21	21
RMSE (σ)	0.0093	0.0090	0.0056	0.0044
$\chi 2$	348.71***	45.95***	29.01***	15.89***
Wald test *p-value*	0.000	0.000	0.000	0.001

Note: Pesaran and Smith (1995) mean group estimation based on yearly data between 1980 and 2020. Robust standard errors are shown below coefficients. ***/**/* denote statistical significance at 1/5/10% confidence level.

Table A2 – Globalisation Indices and EME Import Penetration

country	decade	KOF glob. index	EM-6	EM-10
AT	1980	0.744	0.0031	0.0114
AT	1990	0.809	0.0062	0.0211
AT	2000	0.871	0.0154	0.0457
AT	2010	0.883	0.0277	0.0675
AU	1980	0.639	0.0055	0.0057
AU	1990	0.719	0.0137	0.0141
AU	2000	0.789	0.0395	0.0405
AU	2010	0.810	0.0524	0.0540
BE	2000	0.877	0.0429	0.0628
BE	2010	0.898	0.0306	0.0539
CA	1980	0.676	0.0045	0.0048
CA	1990	0.760	0.0150	0.0154
CA	2000	0.813	0.0345	0.0356
CA	2010	0.834	0.0505	0.0526
CH	1990	0.825	0.0055	0.0077
CH	2000	0.876	0.0100	0.0162
CH	2010	0.901	0.0268	0.0379
DE	1990	0.778	0.0084	0.0181
DE	2000	0.853	0.0224	0.0479
DE	2010	0.878	0.0395	0.0783
FI	1980	0.711	0.0019	0.0061
FI	1990	0.781	0.0061	0.0102
FI	2000	0.851	0.0202	0.0295
FI	2010	0.870	0.0237	0.0369
FR	1980	0.741	0.0037	0.0050
FR	1990	0.785	0.0064	0.0086
FR	2000	0.841	0.0147	0.0220
FR	2010	0.871	0.0260	0.0377
GB	1980	0.780	0.0041	0.0058
GB	1990	0.812	0.0075	0.0097
GB	2000	0.867	0.0215	0.0284
GB	2010	0.891	0.0294	0.0418
IE	1990	0.777	0.0135	0.0169
IE	2000	0.839	0.0261	0.0321
IE	2010	0.859	0.0225	0.0289
IT	1980	0.654	0.0032	0.0055
IT	1990	0.724	0.0051	0.0084
IT	2000	0.793	0.0126	0.0216
IT	2010	0.819	0.0213	0.0360
JP	1980	0.554	0.0100	0.0101
JP	1990	0.612	0.0120	0.0122
JP	2000	0.696	0.0297	0.0300
JP	2010	0.763	0.0459	0.0466
NL	1980	0.797	0.0093	0.0117
NL	1990	0.821	0.0136	0.0191
NL	2000	0.867	0.0465	0.0592
NL	2010	0.897	0.0710	0.0945
PT	1990	0.703	0.0054	0.0069
PT	2000	0.796	0.0081	0.0145
PT	2010	0.830	0.0147	0.0250
SE	1980	0.770	0.0025	0.0052
SE	1990	0.815	0.0046	0.0083
SE	2000	0.879	0.0104	0.0229
SE	2010	0.890	0.0182	0.0366
US	1980	0.661	0.0078	0.0081
US	1990	0.733	0.0186	0.0191
US	2000	0.784	0.0368	0.0377
US	2010	0.815	0.0493	0.0506