

Market Reforms in a Monetary Union: Macroeconomic and Policy Implications

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What are the macroeconomic consequences of increased flexibility in product and labor markets in a monetary union? What do such structural reforms imply for the optimal conduct of monetary policy by the union's central bank? We provide answers to these questions by using a two-country model of a monetary union with sticky prices and wages that incorporates the key features of product and labor market dynamics at the center of ongoing policy debates.¹

The model assumes that the number of producers in the economy—and therefore the range of products available to consumers—varies with economic conditions: Expansions are associated with increases in the number of firms and products. Substitutability across products increases with their number. As a consequence, markups charged by firms decrease when more products are available. Product creation (or producer entry) is costly, and part of the entry cost is assumed to capture “red tape,” inefficient barriers to product creation. This is distorted by such inefficient barriers, by a degree of monopoly power that exceeds the valuation of additional products by consumers implied by their substitutability, and by inefficient markup fluctuations.

Labor markets are also characterized by frictions in each country. In order to hire workers, firms must post vacancies. Vacancy posting is a costly activity, and the aggregate number of jobs created in each period depends on aggregate vacancies posted and the aggregate

¹ The arguments and results below are presented in detail in Cacciatore, Fiori, and Ghironi (2013): “Market Deregulation and Optimal Monetary Policy in a Monetary Union,” CEPR Discussion Paper 9742.

unemployment rate. Job creation is distorted by monopoly power (which gives firms an incentive to under-supply output, and therefore under-create jobs), by the existence of unemployment benefits that distort the valuation of unemployment by workers, and by misalignment between firms' bargaining power in wage determination (inversely related to employment protection) and the elasticity of job creation to aggregate vacancy posting.

A calibrated version of the model successfully reproduces several features of the Euro Area business cycle when the central bank of the model monetary union follows an interest rate rule that reproduces the historical behavior of the European Central Bank (ECB). In this model environment, we study the consequences of structural reforms designed to increase product and labor market flexibility. We capture increased product market flexibility in the model by reducing "red tape" in product creation (lowering sunk costs of producer entry) in one or both countries, and we capture increased labor market flexibility by lowering unemployment benefits and reducing employment protection (increasing the bargaining power of firms).

The distortions summarized above imply that markups are inefficiently high and job creation is inefficiently low in the economies of our model monetary union. Reform of product and labor markets is beneficial for welfare. A reduction of barriers to producer entry increases product creation. This leads to fiercer competition, a larger number of producers, and lower markups in the country that deregulates. Incumbent firms shrink during the transition to the new long-run equilibrium, but overall job creation increases due to stronger labor demand by new entrants.

Labor market reform triggers similar positive effects, although through a different channel: Lower employment protection and unemployment benefits boost job creation by reducing real wages, as the latter depend on the workers' valuation of unemployment and the rents accruing to workers (both of which depend positively on unemployment benefits and employment protection). Aggregate consumption and welfare rise, even if labor market deregulation does not trigger a significant increase in the number of producers and products.

Importantly, contrary to models that capture market reforms in a reduced-form fashion simply by exogenously slashing price and wage markups, our model implies that market reforms do not have deflationary effects. Labor market deregulation has a mild positive effect on prices, since lower unemployment benefits and worker bargaining power have contrasting effects on wage dynamics. On the one hand, lowering the valuation of unemployment and the share of

profits accruing to workers decreases wages. On the other hand, lower wages increase labor demand by firms, which, other things equal, puts upward pressure on wages. On net, these two effects approximately cancel out, leaving firms' marginal costs nearly unaffected in the aftermath of deregulation. By contrast, product market deregulation is inflationary. Increased producer entry and the associated increase in labor demand boost job creation even in the presence of upward pressure on labor costs. In turn, higher wages more than offset the price reduction induced by gradually lower markups as the number of products rises. Real marginal costs of production rise, and so does inflation in the short run.

When market reforms are implemented asymmetrically across countries, they have important consequences for external balances and international relative prices. Both product and labor market reforms result in a current account deficit for the economy that deregulates (referred to as Home below). In the case of product market deregulation, the deficit reflects increased investment opportunities: Home borrows from its partner in the monetary union (Foreign) to finance increased business creation. In the case of labor market deregulation, the current account deficit reflects the higher return to job creation at Home, which stimulates investment from abroad. These incentives combine with Home households' desire to borrow in anticipation of higher income and consumption in the long run. Optimal deficit in the early years of the transition dynamics turns into surplus only in the later years. Thus, our results show that the beneficial effects of structural reforms may come at the cost of weaker current accounts at least initially. In an environment in which countries are under scrutiny for their current account positions (and deficits may trigger recently introduced imbalance procedures), government communication on reforms and their optimal effects on external balances is of paramount importance.

Moreover, our model predicts that structural reforms do not necessarily imply depreciated terms of trade (and thus improved international competitiveness of domestic products). While labor market reform does result in terms of trade depreciation, product market deregulation (or joint reform of both product and labor markets) implies stronger, not weaker, terms of trade as increased business creation puts upward pressure on domestic labor costs relative to foreign. These results inject a note of caution into arguments on the external balance and competitiveness effects of reforms based on static models or on models that treat product and labor market reforms simply as exogenous cuts in price and wage markups. Reforms are unambiguously

beneficial and expansionary for the country that implements them in our model, but their implications for external balances and competitiveness are more nuanced than implied by these alternative analyses.²

Goods and labor market regulation and reforms also have significant implications for optimal monetary policy. High market regulation implies that markups are on average too high and job creation too low. Furthermore, unemployment benefits and employment protection introduce a degree of real wage rigidity in the economy, and excessively high markups amplify the response of sales to shocks. Through these channels, regulation makes cyclical unemployment fluctuations too volatile and amplifies their welfare costs. As a result, optimal policy prescribes a positive long-run inflation rate—to erode markups and boost job creation—and larger short-run departures from this target—to stabilize unemployment fluctuations—than implied by historical ECB behavior.³

Importantly, the optimal response to product and/or labor market deregulation is more expansionary than dictated by the historical policy rule, in order to generate lower markups and expand job creation along the transition dynamics.⁴ Intuitively, the benefits of structural market reforms take time to materialize. Active monetary policy that further boosts aggregate demand during the transition and reduces possible costs in the non-reforming country frontloads some of the long-run gains from reforms and is thus beneficial for welfare.

Once the beneficial effects of reforms have fully materialized, there is less need of positive long-run inflation to erode markups and boost job creation, and strict price stability over the business cycle is less costly (though it remains relatively more costly for the country that does not reform its markets). Asymmetric market reforms in the monetary union introduce a new policy tradeoff for its central bank, as countries with different degrees of market rigidity

² Asymmetric market reforms can induce short-run contractionary effects abroad. For instance, in response to product market deregulation, Home's borrowing to finance increased business creation is associated with a short-run contraction of the Foreign country (under historical ECB policy) as its residents find it optimal to save and invest into Home (Foreign terms of trade depreciation is not sufficient to offset this effect). By contrast, labor market reform in Home does not involve costs for Foreign. The increase in Home's aggregate demand generates positive spillovers for Foreign consumption and employment, and stronger Foreign terms of trade contribute to sustain Foreign purchasing power.

³ While the majority of New Keynesian models imply a zero optimal inflation target for the central bank, our model generates an optimal annual inflation target in the neighborhood of 1.2 percent when markets are rigid.

⁴ Assuming zero inflation in the pre-reform environment, historical policy calls for Home product price inflation at 0.7 percent in the impact period of joint Home product and labor market reforms and Foreign inflation at 0.1 percent. In contrast, under the optimal policy, product price inflation on impact rises to 1.8 percent at Home and 1.2 percent in Foreign.

differ in the desirability of inflation both in the long run and over the business cycle. Therefore, it is beneficial to synchronize reforms across countries in order to remove this tradeoff.