BANK OF CANADA
BANQUE DU CANADA

Discussion Paper/Document d'analyse
2009-2

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Bank of Canada Discussion Paper 2009-2

January 2009

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ISSN 1914-0568

Acknowledgements

I would like to thank Étienne Wasmer for guidance and encouragement throughout the research process. I am grateful to participants of the CEA 2008, Robert Lafrance, Lawrence Schembri, and Eric Santor for useful comments and suggestions. All errors and omissions remain my own.

Abstract

In continental Europe, labour shares in national income have exhibited considerable variation since 1970. Empirical and theoretical research suggests that the evolution of labour markets and labour market imperfections can, in part, explain this phenomenon. The author analyzes the role of capital market imperfections in the determination of the distribution of national income, comparing European and Anglo-Saxon countries. She uses a simple general-equilibrium model to trace the effects of credit and labour market imperfections on factor shares. Simulations indicate that improvements in capital markets can explain lower labour shares. An increase in the degree of employee power results in higher labour shares. Regression results confirm the author's findings. Improvements in credit markets and decreasing employee bargaining power have contributed to shrinking labour shares, especially in Europe. Openness is a negative determinant of labour shares.

JEL classification: C78, E25, J64
Bank classification: Economic models; Labour markets; Financial institutions

Résumé

En Europe continentale, la part du travail dans le revenu national a varié considérablement depuis 1970. Les études empiriques et théoriques semblent imputer une partie du phénomène à l'évolution et aux imperfections du marché du travail. L'auteure analyse le rôle des imperfections des marchés du crédit dans la répartition du revenu national en comparant la situation de pays européens et anglo-saxons. À l'aide d'un modèle d'équilibre général simple, elle détermine les effets des imperfections des marchés du crédit et du travail sur la part des facteurs de production. Ses simulations montrent que l'amélioration des marchés du crédit peut expliquer la réduction de la part du travail. En revanche, l'accroissement du pouvoir de négociation des salariés hausse la part du travail. Les résultats des régressions réalisées corroborent les conclusions de l'auteure. L'amélioration des marchés du crédit et la baisse du pouvoir de négociation des salariés ont ainsi concouru à la diminution de la part du travail, surtout en Europe. L'ouverture aux échanges s'avère un déterminant négatif de la part du travail.

Classification JEL : C78, E25, J64
Classification de la Banque : Modèles économiques; Marchés du travail; Institutions financières

1 Introduction

Most economic models presume that the distribution of national income between labour and capital is constant over time and across countries.[1] An analysis of national accounts time-series data from 1970 onwards, however, reveals a different picture: European labour shares follow a hump-shaped pattern, with shares peaking around 1980 (Figure 1). The increase in labour shares during the 1970s is consistent with the rapid growth of wages during that period to levels above the marginal product of labour. The fall in labour shares during the 1980s coincides with falling real wages below the marginal product of labour and recovering profit rates. By contrast, labour shares in Anglo-Saxon countries have been relatively stable over the past four decades. Variations can be attributed to cyclical fluctuations.

This issue has particular relevance for policy discussions of persistently high unemployment rates in Europe, since current, low labour shares in Europe are seen as one of the determinants of high unemployment rates. In fact, an extensive literature has examined the impact of labour market imperfections on the distribution of national income, and it finds that different labour market conditions in European versus Anglo-Saxon countries can account for larger labour shares in Europe in the 1980s.

Although the importance of financial markets has been addressed extensively in the literature, there has been no attempt, to our knowledge, to relate credit market developments to factor shares. Financial markets in Europe are less developed than in North America, and credit is less accessible (Table 1). Financial market development should be an important determinant of the amount of capital that is employed. When access to sources of finance is limited, new entrepreneurs might not be able to enter the market, and existing firms might not expand their activities or invest in new ones. Financial conditions have, moreover, changed substantially over the past three decades. Importantly, the United States, as well as European countries, have undertaken deregulation of their banking systems, easing regulations, while technical innovation has reduced credit market frictions, such as search costs. It is this change in financial development that may help to explain the change in labour shares over the past three decades. Financial development could have favoured firms in the process of rent splitting with employees, resulting in lower wages and/or employment, and thus lower labour shares. Bertrand, Schoar, and Thesmar (2004) analyze the effect of the deregulation of the French

[1] For instance, in multi-country real business cycle models. See Ambler, Cardia, and Zimmermann (2002).

banking sector in the mid-1980s; they find that the reduction of government intervention increased competition, and was associated with changes in firm behaviour, such as a lowering of the average wage.

In this paper, we extend the literature by examining whether credit market imperfections, in addition to labour market rigidities, can explain movements in factor shares. We first evaluate the quantitative properties of a simple general-equilibrium model with respect to factor shares. Entrepreneurs, workers, and financiers interact in imperfect credit and labour markets, where imperfections are modelled using search and matching frictions. We trace the repercussions of both labour and credit market imperfections on factor shares. Simulations of the model reveal that greater financial market imperfection results in lower labour shares. Distinct developments in financial intermediation in European versus Anglo-Saxon countries may thus help explain the fall in European labour shares over the past three decades. Second, we show that a higher degree of labour market rigidity, modelled by greater bargaining power of workers, can explain higher labour shares. The decrease in bargaining power in Europe over the past decade may thus partly account for the observed decrease in labour shares.

We test the implications of our model empirically using panel regression analysis on 15 OECD countries.[2] We confirm that financial intermediation has a significant negative effect on labour shares. We also find that distinct degrees of labour market rigidities can account for differences in the evolution of labour shares. In addition, inflation has a positive effect on labour shares. Disinflation in the 1980s and 1990s may help to explain shrinking labour shares in that period. Lastly, we find that increased openness has negatively affected labour shares.

The remainder of this paper is organized as follows. Section 2 reviews the literature. Section 3 introduces the theoretical model and presents simulation results. Section 4 outlines the empirical model, and presents regression results. Section 5 concludes.

2 Literature Review

Blanchard, Nordhaus, and Phelps (1997) were the first to note the change in factor shares. They argue that the interplay of adverse labour demand and supply shocks can explain these movements. The increase in European wages with respect to the marginal productivity of labour in the 1970s helps explain the initial increase in labour shares. In the

[2]Including Australia, Austria, Belgium, Canada, Denmark, Finland, France, Italy, Japan, Germany, the Netherlands, Norway, Spain, the United Kingdom, and the United States.

1980s, firms started to adjust to these increased labour costs by lowering wages. In addition, technological progress in favour of capital may have contributed to falling labour shares.

Subsequent research has focused mainly on the evolution of labour markets. Caballero and Hammour (1997) argue that the creation of various labour-protecting institutions in the early 1970s (i.e., the social security system, minimum wage regulations, and centralized unions) contributed to increasing labour shares. The subsequent fall of labour shares is due to the substitution of capital for labour. Bentolila and Saint-Paul (2003) find that discrepancies between the marginal product of labour and the real wage can account for movements in European labour shares.

In related literature, Wasmer and Weil (2004) build a general-equilibrium model including search frictions in both credit and labour markets. They find that credit market frictions affect credit as well as labour market outcomes. In a similar vein, Perotti and Spier's (1993) model interrelates the capital structure of a firm to wage contracts. They argue that firms use the capital structure as an effective bargaining tool in the determination of the wage. They show that debt-for-equity exchanges serve two purposes: wage concessions will be (i) more frequent and (ii) of greater magnitude.

In sum, most of the literature on factor shares focuses on labour markets, and explains increasing labour shares in Europe during the 1970s. Attempts to explain the subsequent fall are, however, less convincing. Given the importance of financial intermediation for the overall performance of the economy, we suggest that the inclusion of credit markets in the analysis is a meaningful extension of the existing literature.

3 The Model

We examine the effect of credit and labour market imperfections using a simple general-equilibrium model based on Wasmer and Weil (2004).

3.1 The matching process

The economy consists of three agents: entrepreneurs, banks, and workers. Entrepreneurs (or firms) and banks (or financiers) interact in the credit market, and entrepreneurs and workers interact in the labour market. The matching of workers and entrepreneurs in the labour market, and of entrepreneurs and banks in the credit market, is modelled symmetrically: agents are matched with certain probabilities constituting search and matching frictions; matching takes time and is costly.

The matching process in the labour market is based on Pissarides (1988). Firms find an unemployed worker (U) for their posted vacancy (V) with a matching probability $q(\theta)$. The probability depends neg-

atively on labour market tightness (from the point of view of entrepreneurs), $\theta = \frac{V}{U}$: the more entrepreneurs are posting vacancies, the tighter the labour market, the less probable is a match ($q'(\theta) < 0$), and the longer it will take for the firm to find a worker, on average.

The matching process in the credit market is symmetric to that in the labour market. Entrepreneurs (E) are looking for a financier (B) and are matched with a probability $p(\phi)$, where ϕ denotes the tightness of the credit market (from the point of view of entrepreneurs): $\phi = \frac{E}{B}$. This probability depends negatively on the state of the credit market; i.e., $p'(\phi) < 0$. The more entrepreneurs are looking for a financier, the tighter the market, the less probable is a match, and the longer it will take for the entrepreneur to find a banker, on average.

Entrepreneurs start by searching for a financier at a flow search cost c, which is paid out of pocket. Financiers dispense a flow search cost k looking for an entrepreneur. Once they find each other, they adopt a contract that stipulates that the bank will finance the recruitment process of the firm, and that the firm will pay ρ to the bank in exchange, once it is producing output. ρ is determined in a bargaining process. The entrepreneur then looks for a worker at a flow search cost γ, which is financed by the bank. Once the entrepreneur finds a worker (with probability $q(\theta)$), they determine the wage, ω, in a bargaining process; start producing an exogenously determined output, y; and pay the bank ρ for as long as the firm operates. Firms are separated at an exogenous rate, s.

3.2 Rent splitting

Both the firm-bank and the firm-worker relationship results in a gain for each party. The total surplus of each relationship is split according to the relative bargaining power of each agent. Let α and β, respectively, be the bargaining power of workers in the work contract, and of banks in the financial contract.

Entrepreneurs and banks

The splitting rule is determined by Nash bargaining over the total surplus of their relationship, and can be shown to result in

$$\rho = \beta_\alpha (y - w) + (1 - \beta_\alpha)(r + s)\frac{\gamma}{q(\theta)}. \tag{1}$$

The equilibrium rental rate, ρ, is a weighted average of the output of the firm net of wages $y - w$, and banks' opportunity cost, which is the cost of financing the recruiting process γ for an average of $\frac{1}{q(\theta)}$ periods. Weighting corresponds to the relative bargaining power of the two parties.

The effective bargaining power of banks, $\beta_\alpha = \frac{\beta}{1-\alpha(1-\beta)}$, depends on the bargaining power of workers in the wage contract, because bankers and entrepreneurs anticipate the wage contract when bargaining over the repayment rule.

Entrepreneurs and workers

Entrepreneurs and workers split their total surplus according to Nash bargaining. The resulting wage can be shown to be

$$\omega = \alpha_\theta (y - \rho) + (1 - \alpha_\theta) b, \tag{2}$$

where b denotes unemployment benefits. The wage is thus a weighted average of output net of repayments to the bank, $y - \rho$, and the workers outside option b. $\alpha_\theta = \alpha \frac{r+s+\theta q(\theta)}{r+s+\alpha\theta q(\theta)}$ increases with α.

3.3 Equilibrium

In equilibrium, the tightness of the credit market can be shown to be

$$\phi^* = \frac{1 - \beta_\alpha}{\beta_\alpha} \frac{k}{c}. \tag{3}$$

To be able to track the effects of our key parameters on employment, we follow Wasmer and Weil (2004) in normalizing the mass of workers to 1, so that u denotes both the number of unemployed and the unemployment rate, $u = U$. In equilibrium, inflows into unemployment and outflows out of unemployment equalize:

$$s(1 - u) = \theta q(\theta) u. \tag{4}$$

Solving for the equilibrium unemployment rate yields $u^* = \frac{s}{\theta q(\theta)+s}$. The complete set of equations that describes the model is given in Appendix A.

3.4 Calibration

The calibration of the model follows Wasmer and Weil (2004). The interest rate, r, is set to 0.05, and output is normalized to 1. The separation rate, s, is 0.15, which corresponds to an average firm lifetime of 6.67 periods. Instead of setting bargaining power α and β to 0.5, we set them to $\frac{1}{5}$ and $\frac{1}{6}$, respectively, because the model with endogenous wages implies that effective bargaining power, which matters for the outcome of wages and repayments, is strictly higher than α and β. We set costs c and k to 0.5, so that search costs turn out to represent a small fraction of gross output. We follow Wasmer and Weil (2004) in parametrizing the matching functions $q(\theta) = q_0 \theta^{-\eta}$ and $p(\phi) = p_0 \phi^{-\varepsilon}$. The elasticity

of each of the matching functions η and ε is 0.5. We calibrate the level parameters p_0 and q_0 so that the outcomes of shares and the unemployment rate are realistic. We set unemployment benefits, b, to 0.1, so that their proportion to equilibrium wages is realistic (Table 2).

The bank share comes close to actual values of financial intermediation in value added. The model produces capital and labour shares that realistically reflect shares in national output.

3.5 Simulation

To evaluate the qualitative effects of credit and labour market imperfections, we calculate factor shares in the model, followed by comparative statics.

3.5.1 *The share of labour, capital, and banks*

Labour shares

The remuneration of labour is equal to the number of workers times the wage rate; i.e., $(1-u)\omega$. To be consistent with our data, labour shares should also include supplements to wages, which amount to contributions to unemployment benefits in the model. Paid-out unemployment benefits (i.e., ub) should equal contributions to unemployment benefits. The total remuneration of employees thus amounts to $(1-u)\omega + ub$.

To calculate labour shares, we divide labour compensation by output. Gross output equals y times the number of active firms, which is equal to the number of employed workers (each entrepreneur is matched with one worker): $(1-u)y$. Deducting entrepreneurs' search costs for workers, γV, and banks' search costs for entrepreneurs, kB, gives us a net output of $(1-u)y - \gamma V - kB$.[3] The calculation of costs is given in Appendix B. The labour share is

$$LS = \frac{(1-u)\omega + ub}{(1-u)y - \gamma V - kB}. \tag{5}$$

Capital shares

The capital share in our data corresponds to the share of entrepreneurs' profits in total value added in the model. Profits per entrepreneur equal output net of factor costs $y - \rho - \omega$; aggregate profits equal $(y - \rho - \omega)(1-u)$. Taking into account contributions to unemployment benefits, which are paid by entrepreneurs, we have

$$CS = \frac{(y - \rho - \omega)(1-u) - ub}{(1-u)y - \gamma V - kB}. \tag{6}$$

[3] We do not deduct search costs of entrepreneurs for bankers, cE, because the cost represents the non-monetary effort of the entrepreneur.

Bank shares

The part of financial intermediation in output amounts to banks' income $\rho(1-u)$ net of search costs $\gamma V + kB$ divided by output:

$$BS = \frac{(1-u)\,\rho - \gamma V - kB}{(1-u)y - \gamma V - kB}. \tag{7}$$

Labour, capital, and bank shares add up to one.

3.5.2 *Improved financial conditions* $p(\phi)$

An improved financial system can be modelled by an increase in the probability of matching $p(\phi)$ at any level of credit market liquidity, ϕ; i.e., an increase in the level parameter p_0. The improved financial environment encourages entrepreneurs to enter the market, θ increases, and the probability of finding a worker $q(\theta)$ decreases. Entrepreneurs will take more time, on average, to find a worker, making the recruiting stage more costly. Banks push up ρ (see equation (1)) and the wage, ω, falls.

Labour shares decrease due to both the price and the quantity effect of labour (Figure 2). First, improved financial conditions negatively affect the wage rate (see equation (5)). Second, higher employment $(1-u)$ results in a decrease in labour shares, because aggregate output increases by more than workers' remuneration.

Capital shares rise due to improved financial conditions, because entrepreneurs' profits increase due to lower wages. Second, higher employment $(1-u)$ slightly raises capital shares. The entry of banks and entrepreneurs and associated search costs, kB, and vacancy posting costs, γV, decrease output net of costs, which still increases capital shares.[4]

Financial intermediation in value added rises due to improved financial conditions: higher repayments directly amplify the part of banks in output.[5]

3.5.3 *Increased bargaining power of workers* (α)

An improvement in the position of employees in the bargaining process can be modelled via an increase in α. Greater bargaining power affects factor prices through two mechanisms. First, the improved position of workers in the determination of the wage contract increases wages. Second, wages are anticipated in the financial contract and positively

[4] The increase in capital shares is mitigated because of higher repayments to the bank (see equation (6)).

[5] We observe again some secondary effects: first, increased employment $(1-u)$ slightly increases the share of banks in total output. Second, banks' increased search costs, kB, and vacancy posting costs, γV, decrease net output, which slightly decreases the part of banks in total output.

affect the effective bargaining power of entrepreneurs β_α, so that the repayment rate falls.

Labour shares rise with improved bargaining power due to both the effect on factor price and quantity (Figure 3). First, higher wages augment the labour share.[6] Second, better prospects of a high wage induce an inflow of unemployed, pushing the employment rate $(1-u)$ down. Decreased employment reduces both output and the total remuneration of workers, which raises the labour share.[7]

Opposing forces determine the outcome of *capital shares*. The simulation shows that the fall of capital shares due to higher wages outweighs the increase due to lower repayments.[8] The share of *financial intermediation* decreases because the repayment rate falls, but the increased effective bargaining power of banks mitigates the latter effect.[9]

4 Empirical Specifications and Econometric Results

This section tests the implication of the model using panel regression analysis, followed by a sensitivity analysis.

4.1 Measuring labour shares

Calculating labour shares is controversial. Simply dividing labour compensation by total value added ignores the fact that labour compensation does not include self-employment labour income, and therefore underestimates the part of labour in national income.[10] Adjusting labour shares for self-employed income is important, given the large differences in self-employment across countries and over time (Figure 4). We follow Askenazy (2003) in calculating labour shares for each industry separately, imputing a salary for the self-employed equal to the mean salary in the

[6] Wages increase because more workers enter the market, and θ decreases, making it easier for entrepreneurs to find a worker. Since financiers have to finance the recruitment stage for a shorter period, entrepreneurs repay less and wages increase. Wages also increase due to higher α.

[7] Note that a secondary effect mitigates this positive impact: the exit of entrepreneurs reduces vacancy posting costs, γV, which boosts output net of costs and reduces the labour share.

[8] Two minor factors contribute to reducing capital shares: first, decreased employment acts negatively on capital shares. Second, the outflow of entrepreneurs lowers vacancy posting costs, γV, which slightly increases output net of costs.

[9] Note again some secondary effects that add to the interplay of opposing forces: first, the exit of entrepreneurs and the associated decrease of vacancy posting costs, γV, slightly increases the share of banks. Second, the decrease in employment $(1-u)$ slightly decreases the share of financial intermediation.

[10] The OECD completely excludes self-employed income from the calculation of labour compensation because information on the latter is not available. Self-employed income is instead accounted for in the share of capital categorized as mixed income.

respective industry. Labour shares in each industry are thus augmented proportionally to the number of self-employed in total employment. The resulting labour shares per industry are weighted according to the importance of the respective industry in value added, and then aggregated:

$$LS_{adjusted} = \sum_{i=1}^{n} \frac{Total\ value\ added_i}{Total\ value\ added} \left[LS_i \cdot \left(1 + \frac{No.\ of\ self-employed_i}{Total\ employment_i} \right) \right],$$

where $i = 1, 2, ...n$ is the industry index.[11] This method seems to account appropriately for self-employment, since it takes into account (i) the differences in the overall importance of self-employment across countries, (ii) differences across industries, and (iii) the fact that the share of self-employment has been decreasing in most OECD countries. Overall, data availability allows for a pool of 15 OECD countries.[12]

The adjustment for self-employment shifts the labour share curve upwards, but the patterns do not change (Figures 5 and 6). The adjustment mitigates, to some extent, the magnitude of labour share variation. Correcting for self-employment has larger effects on European countries, because self-employment is relatively more important, on average. For instance, the peak of average European labour shares in 1980 increases from 55 per cent to 66 per cent due to the adjustment for self-employment.

4.2 Choice of variables and econometric issues

Two implications result from the model analysis in section 3. First, higher credit market frictions result in higher labour shares. Second,

[11] Data on the components of national income are obtained from the OECD databases Annual National Accounts and STAN Structural Analysis. The two databases are compatible, and data are available from 1970 onwards.

Labour compensation comprises wages and salaries of employees and related costs, such as contributions to social security, private pensions, health insurance, and life insurance. Capital shares include corporate profits; i.e., dividends and undistributed profits, interests, proprietors' income, rental income, and taxes on production.

[12] For most countries, data are available from 1970 onwards. Where data on the number of self-employed persons within a single industry are not available for the beginning of the sample period, we interpolate shares backwards. We assume self-employment shares to be constant for all industries but agriculture, where we assume a negative tendency consistent with other countries. These adjustments affect the calculation of labour shares for only the Netherlands, Belgium, and Spain, for no more than two industries and for no more than five years. When data on labour compensation for an industry are missing, we assume that adjusted labour shares follow the same tendency as overall labour shares, which are available for all 15 countries from 1970 onwards.

higher employee bargaining power results in higher labour shares. To test these two implications, we regress labour shares on capital and labour market variables, but also include a number of macroeconomic and control variables (Tables 3 and 4). Capital market measures include the size of the banking sector within an economy, the level of private credit to GDP, and alternative banking and efficiency measures.[13] To account for the labour market, we seek to approximate employment protection legislation (EPL), or labour market flexibility in general, by a number of labour market characteristics.[14] Labour is far more protected in European countries than in Anglo-Saxon countries, but European countries have been adjusting to allow for greater flexibility over the past decade (Table 5).

We have to take into account two issues when estimating the impact of credit markets on labour shares. First, since the financial intermediation industry is a fraction of national income, it is excluded from the calculation of labour shares when regressing the latter on financial intermediation, to avoid collinearity. Labour shares excluding financial intermediation are denoted LS^*.

Second, labour shares are, in theory, stationary. However, the augmented Dickey-Fuller (ADF) unit-root tests on labour shares reveal that labour shares are integrated of order one.[15] We interpret the results as a small-sample estimation problem. Therefore, we need to take into account the potential integration of the dependent variable.[16]

Since both the dependent and independent variables are potentially integrated, this raises the question of cointegration. To check for the presence of cointegration between labour shares and GDP growth and/or inflation, we regress labour shares on the latter and subject the resulting error series to unit-root tests. For most cases, the series indicate integration, suggesting the absence of cointegration. However, these tests

[13] Ideally, we would also like to include a measure of financial liberalization or financial efficiency. To our knowledge, however, adequate time-series indicators of this kind do not exist. Demirgüç-Kunt and Detragiache (1998) construct an indicator of domestic financial constraint. The indicator does not change much over time, however, and would thus lead to biased results in our panel regression.

[14] We cannot include EPL indicators in our regressions because they are point-in-time estimates. Time-series data are either not available for a representative set of countries or they cast doubt on the reliability. Caballero and Hammour (1997), for instance, admit that their index "is far from a sufficient index for the actual severity of ... firing restrictions."

[15] Both ADF tests on individual countries and panel unit-root tests, which have higher power, fail to reject the test in levels, but they reject the test in first differences, indicating an integration of order one.

[16] The same applies to most of our explanatory variables. Summary statistics of our main variables are provided in Tables 6–9.

are likely to suffer from small-sample bias. We therefore cannot fully exclude the possibility of cointegration. Finally, we subject labour shares to structural-break tests around 1980, as discussed by Guscina (2005), but find mixed results due to small sample sizes (33 years). We therefore cannot conclude in favour of or against a structural break in 1980.

4.3 Panel regressions

We perform panel regressions on our pool of 15 countries, using feasible generalized least squares (GLS). We also follow Bentolila and Saint-Paul (2003) in regressing actual labour shares rather than logarithms of labour shares. Lags of the dependent variable account for the likely persistence of labour shares. The estimated equation is:

$$LS^*_{it} = c_i + \sum_{l=1}^{2} a_l LS^*_{i(t-l)} + \beta_{Inf} INF_{it} + \beta_{FI} FI_{it} + \sum_{l=0}^{2} \beta_{GDP\_l} LOG(GDP_{i(t-l)}) + \eta_{it}, \quad (8)$$

where the subindices denote countries ($i = 1, ..., 15$) and time ($t = 1970, ..., 2005$). LS^*_{it} denotes the labour share, c_i the time invariant fixed effect for country i, INF_{it} the inflation rate, FI_{it} the measure of financial intermediation, GDP_{it} is GDP, $LOG()$ the logarithm operator, and η_{it} the random disturbance.

Estimation results are reported in Table 10. The cross-specific fixed-effect c represents the average of the c_i.[17]

The estimated effect of financial intermediation is highly statistically significant and negative.[18] This implies that a well-developed financial system is associated with low labour shares: an increase in financial intermediation of one percentage point has a negative impact of 0.1 on short-run labour shares. This result indicates that financial intermediation can help to explain the puzzle as to why labour shares in Europe seem to constantly shrink but remain relatively constant in Anglo-Saxon countries: the share of financial intermediation in value added increased more significantly in European countries, which we associate with the deregulation of the banking sector in Europe and other improvements in

[17] The assumption of fixed effects can be tested using the Wu-Hausmann test. The results of the test on our data provide strong evidence against the null hypothesis; i.e., the fixed estimator is the preferable estimation method.

[18] Granger causality tests (not reported) for 1–3 lags support the hypothesis that financial intermediation causes labour shares to decrease.

capital markets, whereas the financial sector in Anglo-Saxon countries has been relatively deregulated to start with.

The GDP growth coefficient is statistically significant, and is consistent with Merz's (1995) evidence. She argues that the real wage fluctuates much less over the cycle than average productivity due to wage rigidities. Additional income during economic booms thus goes to capital in the form of greater profits, resulting in high capital shares. The counterpart, labour shares, are thus countercyclical.

Inflation enters with a significant and positive coefficient, which is consistent with previous findings (Alcalá and Sancho 2000). An increase of 1 per cent in inflation increases labour shares by 0.13 percentage points.[19] Alcalá and Sancho (2000) argue that inflation negatively affects capital shares: first, inflation causes fixed costs of price adjustments to increase, and profits to decrease. Second, markup pricing on the basis of historical costs lowers real markups when inflation is high. Thus, high inflation rates during the 1970s may have contributed to increasing labour shares in Europe. During the 1990s, disinflation may have favoured profits, causing labour shares to decrease. Alternatively, the argument might run in the opposite direction: firms facing higher costs due to high real wages responded with increasing prices.

4.4 Sensitivity analysis

4.4.1 *Robustness to alternative specifications*

The coefficients from the GLS regression in Table 10 are reported in the top row of Table 11. Each row of the table represents a different specification. In all regressions, the coefficient on financial intermediation is negative, implying that higher credit market performance is associated with low labour shares. The coefficients are statistically significant. The coefficient on inflation is robust to alternative specifications and highly statistically significant.

First, to account for the fact that GDP growth is endogenous and might bias our results, we use a two-stage GLS instrumental variable (IV) estimator, which instruments GDP growth and its lag (Table 11, row 2, GLS with IV). Instruments further include two periods of lagged labour shares, lagged inflation, and union power. The estimated coefficient on financial intermediation is now significant at the 1 per cent level and jumps from -0.10 to -0.72, implying a much greater negative effect of financial intermediation on labour shares. The coefficient on inflation is slightly weaker.

[19] Granger causality tests (not reported) for 1–4 lags support the hypothesis that inflation causes labour shares to increase.

Second, to determine whether labour shares in European countries have been affected differently, we remove Anglo-Saxon countries from the pool (row 3, Europe only). This leads to an increase in the estimated coefficient of inflation on labour shares from 0.115 to 0.130. The coefficient on financial intermediation increases from -0.722 to -0.754. Dropping Nordic countries from the panel (row 4, Cont. Europe) further increases the estimated impact of financial intermediation on labour shares to -1.129. All coefficients are highly significant. We may conclude that the effects of financial intermediation are of greater importance in Europe than in Anglo-Saxon countries. This observation is in line with the notion that the deregulation of the financial sector in European countries during the 1980s brought about more pronounced changes, whereas financial markets were relatively deregulated in Anglo-Saxon countries to start with.

Third, to consistently estimate non-stationary data (i.e., labour shares), we follow Bentolila and Saint-Paul (2003) in using the dynamic panel estimator (row 5, GMM (orthogonal)) proposed by Arellano and Bover (1995).[20] This estimator allows the estimation of non-stationary data, and also enables us to include endogenous explanatory variables; i.e., GDP growth. Last, the estimator is efficient with respect to the feasible GLS estimator, because it uses all available instruments (Wooldridge 2002). Given that the small-sample bias increases with the number of instruments, we restrict the number of lagged dependent variables to a maximum of five.[21]

The coefficient on lagged labour shares of 0.859 indicates high autocorrelation. The coefficient on financial intermediation drops to -0.393, whereas the coefficient on inflation is slightly stronger (0.130). Both coefficients are highly statistically significant. We confirm the negative correlation of GDP growth and labour shares. The coefficient grows with respect to the base specification to -0.137 and remains significant at the 1 per cent level.

4.4.2 *Robustness to alternative variables*

The coefficients from the GMM with orthogonal deviations in Table 11 are reported in the top row of Table 12. The inclusion of alternative variables does not change the signs, but affects the magnitude and sig-

[20] The generalized method of moments (GMM) weighting method is again cross-section weights, which assumes the presence of cross-section heteroskedasticity. The coefficient covariance method is the White period method, which is robust to arbitrarily serial correlation and time-varying variances in the disturbances.

[21] Wooldridge (2002) states that "in practice, it may be better to use a couple of lags rather than lags back to $t = 1$."

nificance levels of the baseline variables. In all instances, the coefficient on financial intermediation is statistically significant and negative. The coefficient on inflation is statistically significant in all but one specification. Coefficients on GDP growth and lagged labour shares remain highly statistically significant as well.

First, accounting for labour market dynamics (Table 12, column 3, Labour market) results in reinforcing the effects of the baseline variables: the coefficient on inflation increases from 0.129 to 0.162, and the coefficient on financial intermediation from -0.392 to -0.528. All the new variables are statistically significant, but the effects are ambiguous. Union density enters with a positive coefficient, suggesting that higher employee power protects labour shares. This result is quantitatively consistent with the findings of Morel (2008) – who estimates a coefficient of 0.06 – and matches our theoretical findings. The unionization coefficient can help to explain the decrease in European labour shares over the past two decades: union density decreased 22 percentage points in Europe from the late 1970s to 2005, whereas Anglo-Saxon union participation was weaker to start with, and decreased only 13 percentage points over that period.

The estimated coefficient on labour market flows is positive. This result contradicts the assumption that high labour market regulation, associated with low labour market flows, protects wages and therefore labour shares. One potential explanation is that labour market inflexibility, associated with low labour market flows, induces firms to shift away from labour to capital. This argument is consistent with Caballero and Hammour's (1997) findings. They suggest that employers respond to costly and inflexible labour by substituting capital for labour. This regression should, however, be interpreted with care, since data availability for labour flows reduces the pool to ten countries only.

Other labour market indicators do not yield significant results. The inclusion of the number of strikes per employees results in a positive coefficient, suggesting that higher employee power protects labour shares. The coefficient is, however, not statistically significant. Bentolila and Saint-Paul (2003) argue that increasing bargaining power of employees creates a gap between the marginal revenue product of labour and the wage, and positively influences labour shares in the short run. Replacement rates and the minimum wage do not yield significant results.[22]

Trade openness has a significant negative effect on labour shares,

[22]This might be due to their nature, which makes them unsuitable for panel regressions: the ratio of the minimum wage to the average wage, for instance, does not vary considerably over time, and time-series data are available for nine countries only.

which is qualitatively consistent with Harrison's (2002) and Morel's (2008) findings. Quantitatively, Harrison's smaller estimate might be due to the fact that her regression includes alternative measures of openness. Our estimate is, however, weaker than Morel's estimated coefficient. The opening up of national to international markets resulted in higher international competition in labour markets. We argue that competition increases the elasticity of labour demand and weakens employee power. This results in a smaller surplus that is allocated to employees in the wage-bargaining process, and thus results in lower labour shares.

Second, accounting for alternative measures of the capital market (Table 12, column 4, Capital market) confirms our previous results, but weakens the effects of the baseline variables: the coefficient on inflation decreases from 0.129 to 0.108, and the coefficient on financial intermediation from -0.392 to -0.133. Stock turnover carries a significant positive coefficient. This is consistent with Perotti and Spier's (1993) model: higher equity financing at the detriment of debt financing lowers the power of employers in the bargaining process with employees, and positively affects wages and labour shares.

Private credit divided by GDP enters with a negative coefficient, consistent with Perotti and Spier (1993): higher debt ratios weaken the power of employees in the wage-bargaining process, and affect wages and thus labour shares negatively. Lending activity has been increasing over the sample period in all sample countries, from which we may conclude that increasing lending activity can help to explain shrinking labour shares. Other variables do not yield significant results.[23]

The last specification (Table 12, column 5, Summary) includes both labour market indicators and financial measures that have proven interesting before. The baseline variables, union power, openness, and private credit are robust to variations of the variables included. Stock turnover and interest income are not robust to the inclusion of alternative variables. This specification results in the strongest coefficient for inflation and a weaker coefficient on financial intermediation.

5 Conclusion

This paper finds empirical and theoretical evidence that not only labour market characteristics but also the level of financial intermediation plays an important role in the determination of factor shares. We use a general-equilibrium model including search and matching frictions in both credit and labour markets. The model illustrates the dynamics by

[23] The estimated coefficient on interest revenues as a percentage of balance sheet total is negative, but small and not statistically significant. Claims on the private sector are weakly linked to labour shares, where the effect is counterintuitive.

which credit market imperfections affect factor shares. A decrease in the degree of credit market imperfections results in a decrease in labour shares. The model also reflects how a decrease in workers' bargaining power results in decreased labour shares.

Second, we test our findings empirically. Our panel data study on 15 major OECD countries finds that financial intermediation has a strong negative and significant effect on labour shares. The deregulation of the banking sector, and other improvements in credit markets, help to explain shrinking labour shares, especially in Europe. Labour market rigidities, such as strong unionization, positively influence labour shares. These two results match our findings from the model. We also find that inflation is a positive determinant of labour shares, while globalization increases competition and helps to explain shrinking labour shares.

Possible extensions of this research include regression on industry-specific labour shares, as in Bentolila and Saint-Paul (2003). Adding the industry dimension would augment the number of observations, and yield insights into the dynamics of labour shares within industries and their determinants.

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Table 1: Getting Credit

	Legal rights index	Credit information index	Public credit registry coverage	Private credit bureau coverage
Australia	9	5	0	100
Austria	5	6	1.2	45.4
Belgium	5	4	55.3	0
Canada	7	6	0	100
Denmark	7	4	0	7.7
France	3	2	1.8	0
Germany	8	6	0.6	88.2
Italy	3	6	6.1	59.9
Japan	6	6	0.0	61.2
Netherlands	8	5	0	68.9
Norway	6	4	0.0	100
Spain	5	6	42.1	6.5
Sweden	6	5	0	100
United Kingdom	10	6	0	76.2
United States	7	6	0	100
Cont. Europe, average	5.5	4.88	13.39	34.58
Northern Europe	6	4.5	0	100
Anglo-Saxon, average	8	6	0	92

Source: World Bank, Doing Business - comparing business regulation. International Finance Corporation.

Table 2: Calibration and Equilibrium Values

α=1/5	ε=0.5	Capital share	31.895%
β=1/6	η=0.5	Labour share	62.1%
c=0.5	s=0.15	Bank share	6.004%
k=0.5	r=0.05	Unemployment rate	5.563%
y=1	p_0=3	Wage rate	0.342
b=0.1	q_0=1.5	Repayment rate	0.474

Table 3: List of Macroeconomic and Labour Market Variables

	Abbreviation	Definition / Justification	Source
Macroeconomic variables*			
Labour shares	LS	See section 4.	OECD national accounts
GDP growth	LOG(GDP)	To account for cyclical fluctuations, and differences in the overall macroeconomic performance.	IMF
Inflation	INF	Disinflation over the past two decades might have affected profits and thus factor shares.	IMF
Openness	OPEN	The sum of exports and imports divided by GDP. It serves as a proxy for international competition, which is likely to have affected product, capital, and labour markets, and thus factor shares.	OECD statistics
Labour market**			
Labour market flows	FLOWS	High job in- and outflows are associated with weak employment protection and thus greater flexibility.	Int. Labor Organization (ILO)
Unioni-zation	UNION	Union membership ratio. It approximates the bargaining power of employees.	OECD statistics
Replace-ment rates	RR	Level of pensions as a percentage of previous individual earnings, as another indicator of the generosity of a social system.	OECD source
Strikes and lockouts	SRIKE	Number of strikes and lockouts per employees. It captures workers' bargaining power.	ILO LABORSTA database
Minimum wage	MINWAGE	Measures the minimum wage to the average wage. It is a proxy of the cost of (especially easily substitutable) labour.	OECD database, Labour Force Statistics

*It should be noted that Europe went through numerous structural changes over the sample period, which might have influenced factor shares.These include the integration of product markets, reduced barriers to factors of production, and the European enlargement. However, we cannot account for these changes due to a lack of variables.
**The list of possible indicators of labour market rigidities is far richer; however, data availability constrains the number of indicators that can be used in the regression.

Table 4: List of Capital Market Variables

	Abbreviation	Definition / Justification	Source
Capital markets			
Financial inter-mediation	FI	Value added of financial intermediation in national income*, to account for the size of the banking sector.	OECD source
Private credit	PC	Defined as private credit by deposit money banks to GDP as a measure of banking activity.	Beck (1999) et al.
Claims to GDP	CLAIM	Measures claims of deposit money banks on the private sector.	IMF IFS
Banking profit	PROFIT	Banking profits in per cent of balance sheet total as a measure of bank profitability.	OECD bank profitability data base
Net interest margin	INTEREST	Interest income minus interest expense divided by total bank assets, as a measure of banking efficiency.	
Stock turnover	STOCK	Total shares traded on the stock market exchange divided by GDP, to account for the liquidity of the equity market.	Beck et al. (1999)
Operating costs	COST	Operating costs divided by total assets, to measure banking efficiency.	OECD Bank profitability data base
Bank income	INCOME	Measures net income divided by total assets.	
Financial system	FINANCE	Aggregate size of the financial system calculated as the sum of stock market capitalization, bank loans, and bond markets.	Hartmann et al. (2007)

*We use the subcategory of financial intermediation comprising depository institutions; i.e., banks other than the central bank.

Table 5: Employment Protection Legislation

	Dismissal		Notice		Strictness		Inconveniences	
	1990	2003	1990	2003	1990	2003	1990	2003
Australia	1.5	0.02	0.01	0.01	0.01	1.5	0.5	1.5
Austria	4.25	3.75	0.02	0.86	2.92	2.37	2.5	2.5
Belgium	1.75	1.75	2.286	2.43	1.68	1.73	0.01	0.01
Canada	0.02	0.02	0.95	0.95	1.32	1.32	0.01	0.01
Denmark	1.5	1.5	2.04	1.91	1.52	1.47	0.01	0.01
Finland	1.75	2.75	1.86	0.01	2.79	2.17	4.75	2.75
France	0.03	0.03	1.52	1.91	2.34	2.47	2.5	2.5
Germany	3.25	3.25	0.01	1.29	2.58	2.68	3.5	3.5
Italy	3.25	3.25	0.57	0.57	1.77	1.77	1.5	1.5
Japan	3.33	3.5	1.81	1.81	2.38	2.44	0.02	0.02
Netherlands	2.75	3.25	0.01	1.91	3.08	3.05	5.5	0.04
Norway	3.75	3.75	0.01	0.01	2.25	2.25	0.02	0.02
Spain	3.75	3.25	3.14	2.57	3.88	2.61	4.75	0.02
United Kingdom	0.75	1.25	1.10	1.10	0.95	1.12	0.01	0.01
United States	0.5	0.5	0.00	0.00	0.17	0.17	0.00	0.00
Cont. Europe, average	2.94	2.88	1.70	1.68	2.47	2.27	2.78	2.25
Northern Europe	2.75	3.25	1.43	0.01	2.52	2.20	3.38	2.38
Anglo-Saxon, average	1.08	1.25	0.68	0.68	0.81	0.87	0.67	0.67

Notes: Indicators are on a scale from 0 to 5, where low indicators stand for low EPL.
Dismissal stands for difficulty of dismissal.
Notice stands for notice and severence pay.
Strictness stands for overall strictness of protection against dismissals.
Inconveniences stands for regular procedural inconveniences.
Source: OECD. Stat, Dataset: Strictness of EPL, regular employment

Table 6: Summary Statistics: Labour Shares

	Data horizon	Obs.	Mean	Maximum	Minimum	Std. dev.	Stationarity
AUS	1970-2001	32	0.523903	0.616609	0.457310	0.049307	I(1) at 1%
AUT	1970-2005	36	0.554114	0.617246	0.489393	0.033360	I(1) at 1%
BEL	1970-2004	35	0.562955	0.620403	0.524144	0.030091	I(1) at 1%
CAN	1970-2004	35	0.578003	0.660687	0.505597	0.041825	I(1) at 1%
DNK	1970-2005	36	0.582115	0.624005	0.521531	0.028831	I(1) at 1%
DEU	1970-2005	36	0.590698	0.638135	0.538057	0.029543	I(1) at 1%
ESP	1970-2004	35	0.526667	0.568124	0.495484	0.021896	I(1) at 1%
FIN	1970-2003	34	0.576882	0.631491	0.506462	0.036368	I(1) at 1%
FRA	1970-2004	35	0.540154	0.599873	0.481421	0.042510	I(1) at 1%
JPN	1970-2005	36	0.525814	0.582783	0.469368	0.037199	I(1) at 1%
NOR	1970-2003	34	0.514199	0.562018	0.454529	0.026596	I(1) at 1%
UK	1970-2004	35	0.563618	0.627291	0.515000	0.036293	I(1) at 1%
ITA	1970-2003	34	0.525323	0.605006	0.432917	0.046625	I(1) at 1%
NLD	1970-2005	36	0.625170	0.725907	0.552595	0.047395	I(1) at 1%
USA	1970-2004	35	0.507925	0.562765	0.451471	0.036394	I(1) at 1%

Table 7: Summary Statistics: Financial Intermediation

	Data horizon	Obs.	Mean	Maximum	Minimum	Std. dev.	Stationarity
AUS	1989 - 2004	16	0.064788	0.075425	0.050869	0.007577	I(1) at 1%
AUT	1976 - 2003	28	0.038928	0.049021	0.031227	0.004749	I(1) at 1%
BEL	1995 - 2001	7	0.041570	0.045416	0.034455	0.003948	I(1) at 1%
CAN	1980 - 2001	22	0.048118	0.058705	0.038155	0.006250	I(1) at 1%
DNK	1970 - 2001	33	0.032773	0.041293	0.023366	0.004772	I(1) at 1%
DEU	1970 - 2003	34	0.037300	0.047037	0.029972	0.003630	I(1) at 5%
ESP	1995 - 2001	7	0.043043	0.046472	0.040669	0.002045	I(1) at 1%
FIN	1975 - 2004	30	0.029445	0.040285	0.022413	0.004274	I(1) at 1%
FRA	1978 - 2003	26	0.038094	0.045328	0.031189	0.004210	I(1) at 1%
JPN	1970 - 2002	33	0.032773	0.041293	0.023366	0.004772	I(1) at 1%
NOR	1996 - 2004	9	0.060045	0.066589	0.054870	0.004695	I(1) at 1%
UK	1970 - 2003	34	0.028297	0.040119	0.014199	0.006065	I(1) at 1%
ITA	1097 - 2003	34	0.034227	0.055540	0.021587	0.008268	I(1) at 1%
NLD	1992 - 2003	12	0.035216	0.043450	0.026991	0.005673	I(1) at 1%
USA	1987 - 2003	17	0.070097	0.080621	0.059525	0.007004	I(1) at 1%

Table 8: Summary Statistics: Inflation

	Data horizon	Obs.	Mean	Maximum	Minimum	Std. dev.	Stationarity
AUS	1970-2005	36	0.063031	0.154762	0.002144	0.041395	I(1) at 1%
AUT	1970-2005	36	0.037826	0.095368	0.005144	0.022687	I(1) at 1%
BEL	1970-2005	36	0.042955	0.129032	0.009424	0.031281	I(1) at 1%
CAN	1970-2005	36	0.048725	0.123377	0.001115	0.033610	I(1) at 1%
DNK	1970-2005	36	0.031406	0.070388	-0.001361	0.019538	I(1) at 1%
DEU	1970-2005	36	0.054480	0.154545	0.012150	0.038441	I(1) at 1%
ESP	1970-2005	36	0.085618	0.241135	0.018319	0.058724	I(1) at 1%
FIN	1970-2005	36	0.057039	0.178114	0.001871	0.047685	I(1) at 1%
FRA	1970-2005	36	0.053497	0.136986	0.005112	0.041960	I(1) at 1%
JPN	1970-2005	36	0.080956	0.210526	0.016684	0.059567	I(1) at 1%
NOR	1970-2005	36	0.034620	0.231845	-0.008953	0.048354	I(1) at 1%
UK	1970-2005	36	0.038389	0.102625	-0.007905	0.027639	I(1) at 1%
ITA	1970-2005	36	0.056529	0.136571	0.004655	0.036046	I(1) at 1%
NLD	1970-2005	36	0.070363	0.240741	0.015674	0.055196	I(1) at 1%
USA	1970-2005	36	0.047950	0.137767	0.016094	0.029879	I(1) at 1%

Table 9: Summary Statistics: GDP Growth

	Data horizon	Obs.	Mean	Maximum	Minimum	Std. dev.	Stationarity
AUS	1970-2005	36	5.581787	6.152333	5.055902	0.331722	I(1) at 1%
AUT	1970-2004	35	4.678910	5.564903	3.328627	0.668673	I(0)
BEL	1970-2004	35	4.878843	5.772686	3.575151	0.647751	I(1) at 1%
CAN	1970-2004	35	5.945870	6.910751	4.516339	0.710101	I(1) at 1%
DNK	1970-2004	35	6.945332	7.766375	5.681196	0.644839	I(1) at 1%
DEU	1970-2004	35	4.316740	5.150397	3.135494	0.607373	I(1) at 1%
ESP	1970-2004	35	5.937917	6.994667	4.532599	0.706754	I(1) at 1%
FIN	1970-2005	36	4.463250	4.926123	3.946057	0.272860	I(1) at 1%
FRA	1970-2004	35	6.615427	7.516216	5.278115	0.669217	I(1) at 1%
JPN	1970-2004	35	6.557098	7.384114	5.234312	0.660879	I(1) at 1%
NOR	1970-2005	36	8.127007	8.516019	7.498318	0.312531	I(1) at 1%
UK	1970-2004	35	5.295013	6.229694	3.994524	0.669703	I(1) at 1%
ITA	1970-2005	36	4.698306	5.219198	4.051333	0.344752	I(1) at 1%
NLD	1970-2004	35	6.552958	7.539559	5.305789	0.662683	I(1) at 1%
USA	1970-2004	35	8.331530	9.365565	6.932448	0.733064	I(1) at 1%

Table 10: GLS Regression Results

Variable	Coefficient	Std. error	$t-$statistic	Prob.
C	0.173882	0.032319	5.380213	0.0000
LS*_(-1)	0.949557	0.047433	20.01900	0.0000
LS*_(-2)	-0.171491	0.045309	-3.784888	0.0002
LOG(GDP_)	-0.070264	0.022785	-3.083808	0.0022
LOG(GDP_(-1))	0.061382	0.021432	2.864096	0.0045
FI_	-0.104689	0.055431	-1.888624	0.0599
INF_	0.130535	0.019016	6.864551	0.0000

Weighted statistics	
R-squared	0.984853
Adjusted R-squared	0.983840
Durbin-Watson stat	1.823996

Unweighted statistics	
R-squared	0.984192
Sum squared resid	0.026985
Durbin-Watson stat	1.771723

Notes: Dependent Variable: LS*_
Method: Pooled estimated GLS (Cross-section weights)
Effects specification: Cross-section fixed (dummy variables)
Sample (adjusted): 1971 2003
Included observations: 33 after adjustments
Cross-sections included: 15
Total pool (unbalanced) observations: 332
Linear estimation after one-step weighting matrix
White cross-section standard errors and covariance

Table 11: Sensitivity of Coefficients to Alternative Specifications

	Estimated coefficients for the baseline explanatory variables			
Specification	LS_(-1)	INF_	FI_	LOG(GDP_)
GLS	0.949557	0.130535	-0.104689	-0.070264
	[0.047433]	[0.019016]	[0.055431]	[0.022785]
	(0.0000)	(0.0000)	(0.0599)	(0.0022)
GLS with IV	0.837812	0.115182	-0.721902	-
	[0.020197]	[0.021284]	[0.118974]	
	(0.0000)	(0.0000)	(0.0000)	
Europe only	0.837453	0.130172	-0.753515	-
	[0.022068]	[0.017243]	[0.132393]	
	(0.0000)	(0.0000)	(0.0000)	
Cont. Europe	0.784473	0.188555	-1.128763	-
	[0.064399]	[0.073368]	[0.318374]	
	(0.0000)	(0.0110)	(0.0005)	
GMM	0.858917	0.129788	-0.392864	-0.136509
(orthogonal)	[0.062902]	[0.024563]	[0.163807]	[0.030950]
	(0.0000)	(0.0000)	(0.0171)	(0.0000)

Notes: We still include lagged GDP growth and two periods of lagged labour shares in the regression but estimated coefficients are not shown. Standard errors are given in square brackets [], and p-values in round brackets ().

Table 12: Panel Estimates Including Alternative Variables

Variable	Baseline	Labour market	Capital market	Summary
LS*_(-1)	0.858917	0.781190	0.787698	0.510482
	[0.062902]	[0.065411]	[0.059389]	[0.099963]
	(0.0000)	(0.0000)	(0.0000)	(0.0000)
INF_	0.129788	0.161602	0.108306	0.248737
	[0.024563]	[0.026423]	[0.075226]	[0.074900]
	(0.0000)	(0.0000)	(0.1531)	(0.0011)
FI_	-0.392864	-0.527947	-0.132696	-0.184786
	[0.163807]	[0.192734]	[0.198860]	[0.241624]
	(0.0171)	(0.0066)	(0.0506)	(0.0445)
LOG(GDP_)	-0.136509	-0.101750	-0.224145	-0.225632
	[0.030950]	[0.034118]	[0.033454]	[0.058033]
	(0.0000)	(0.0031)	(0.0000)	(0.0002)
UNION_	-	0.036524	-	0.108047
		[0.015681]		[0.045924]
		(0.0206)		(0.0200)
FLOWS_	-	0.000573	-	-
		[0.000340]		
		(0.0952)		
OPENNESS_	-	-0.000506	-	-0.001210
		[0.000129]		[0.000271]
		(0.0001)		(0.0000)
STOCK_	-	-	0.002867	0.004016
			[0.000903]	[0.003622]
			(0.0020)	(0.2693)
PC_	-	-	-0.009699	-0.033308
			[0.006908]	[0.011620]
			(0.0635)	(0.0048)
INTEREST_	-	-	-0.001189	-0.001994
			[0.002442]	[0.003703]
			(0.7272)	(0.5910)
CLAIM_	-	-	0.011934	
			[0.003572]	
			(0.0012)	

Notes: Standard errors are given in square brackets [], and p-values in round brackets ().

Figure 1: Labour Shares - All Countries

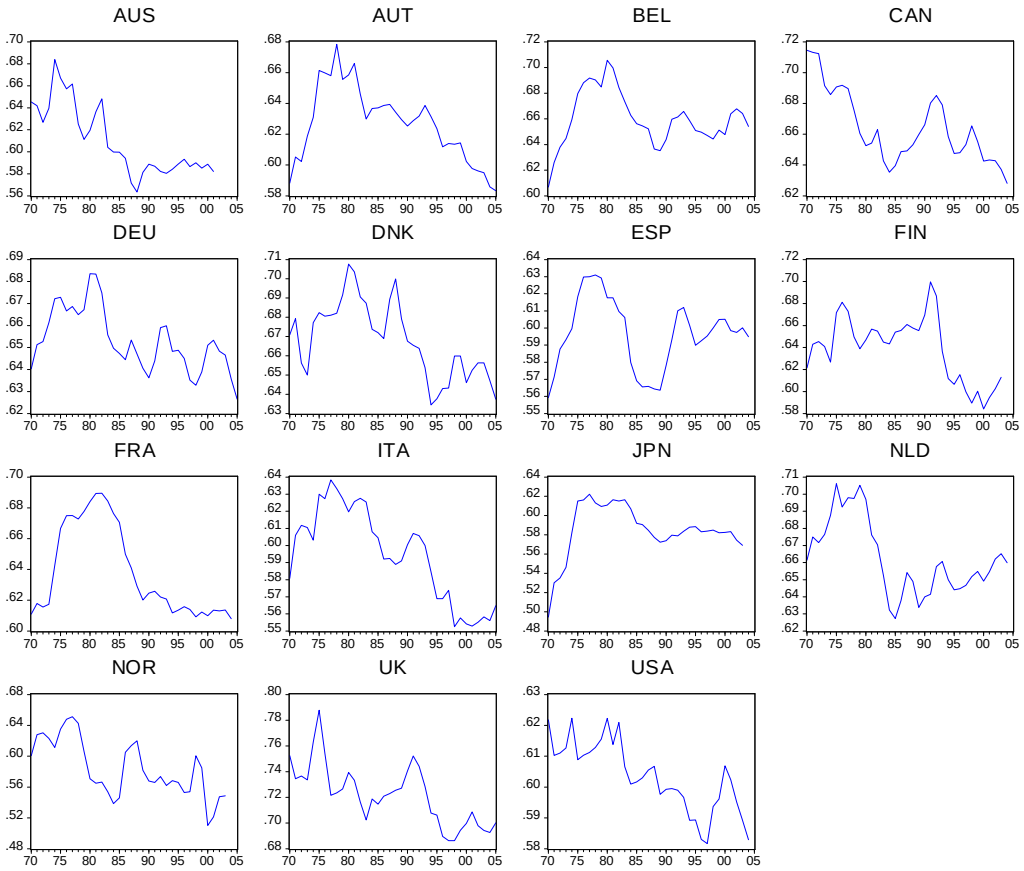


Figure 2: Comparative Statics (p_0)

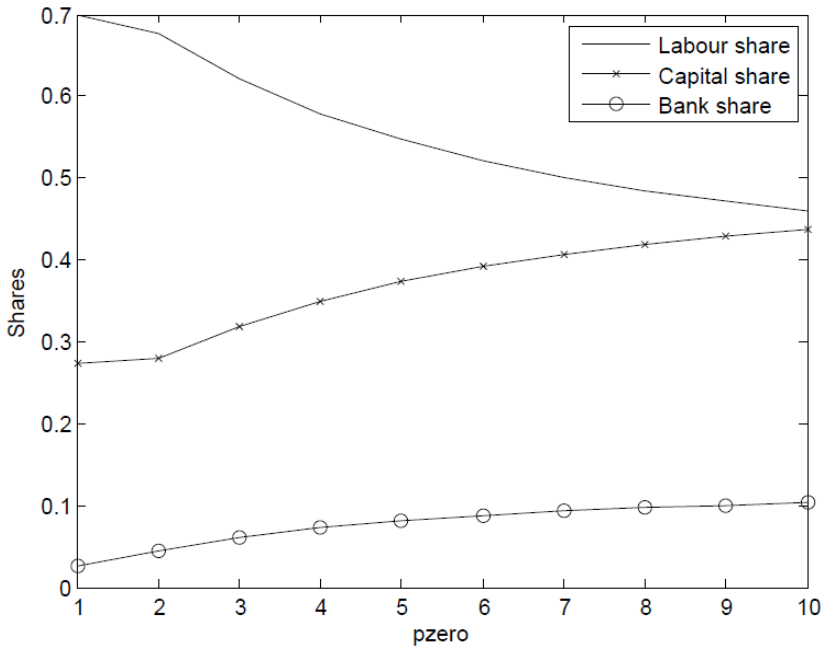


Figure 3: Comparative Statics (α)

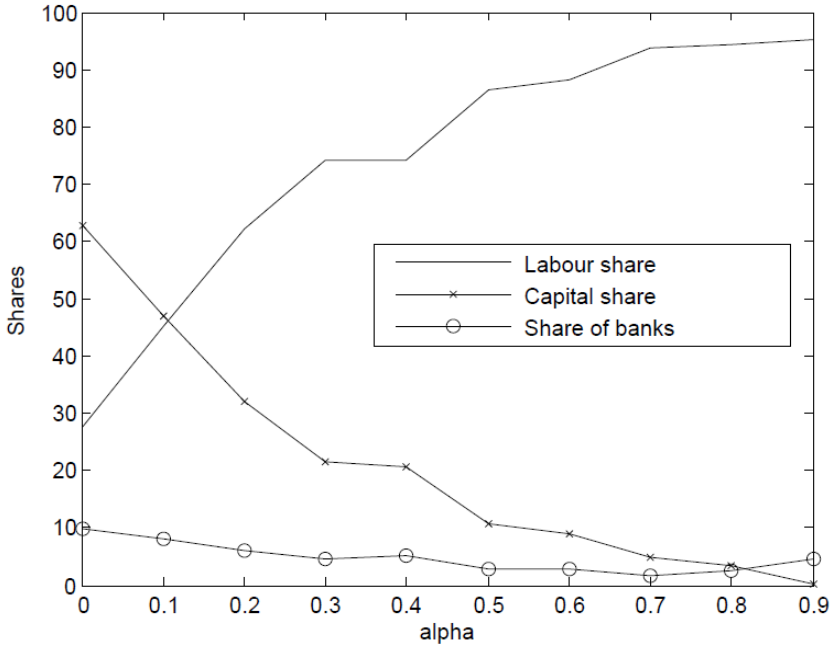


Figure 4: Self-Employment in Total Employment

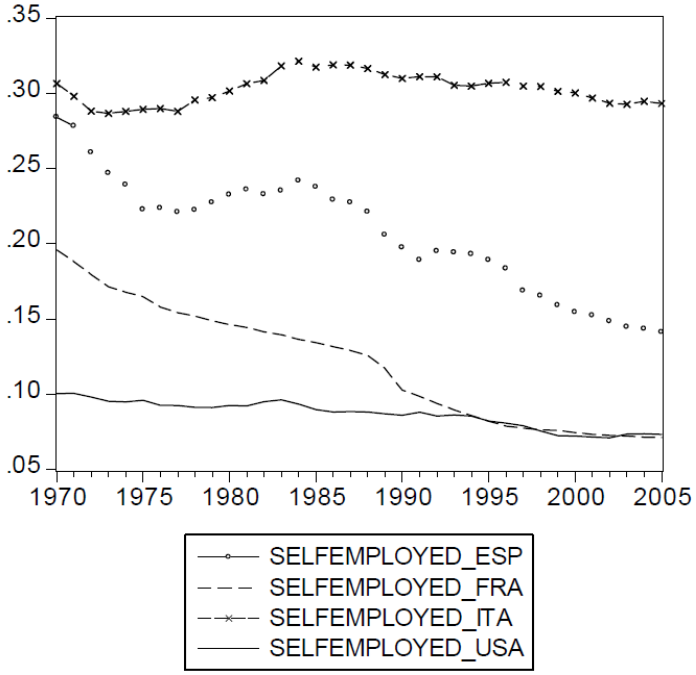


Figure 5: Labour Share and Adjusted Labour Share for France

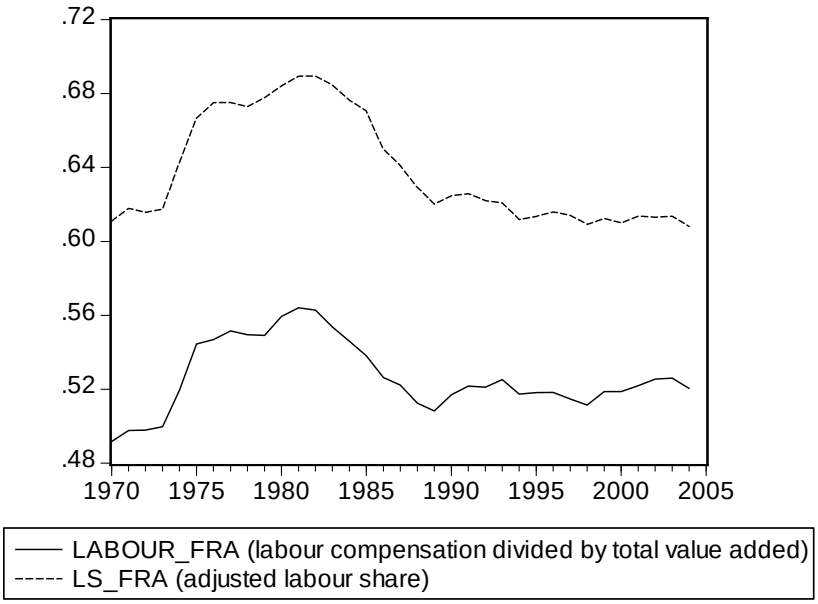
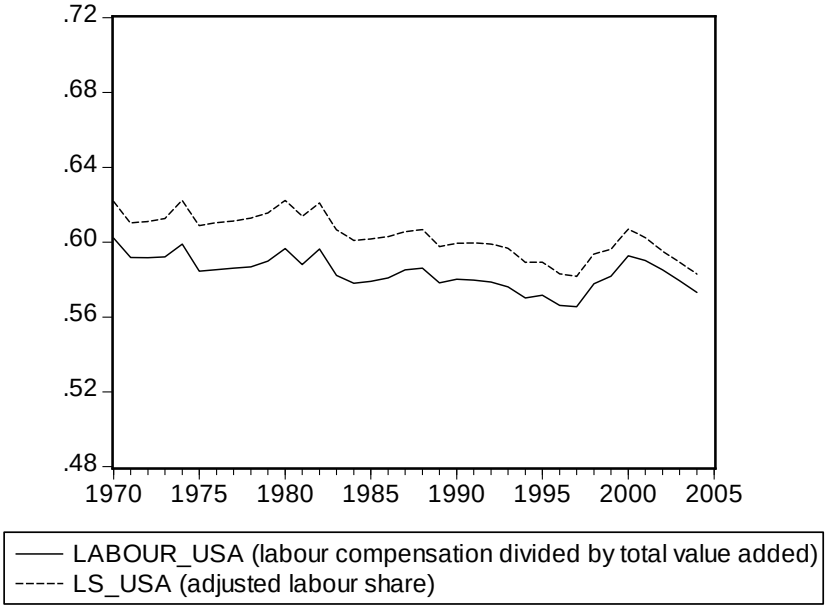


Figure 6: Labour Share and Adjusted Labour Share for the United States



Appendix A: System of Equations

The system in equilibrium is described by eight equations:

$$\phi^* = \frac{1-\beta_\alpha}{\beta_\alpha}\frac{k}{c}, \tag{A1}$$

$$s(1-u) = q_0\theta^{1-\eta}u, \tag{A2}$$

$$\alpha_\theta = \alpha\frac{r+s+\theta^{1-\eta}}{r+s+\alpha\theta^{1-\eta}}, \tag{A3}$$

$$\beta_\alpha = \frac{\beta}{1-\alpha(1-\beta)}, \tag{A4}$$

$$\omega = \alpha_\theta\,(y-p) + (1-\alpha_\theta)b, \tag{A5}$$

$$p = \beta_\alpha\,(y-w) + (1-\beta_\alpha)(r+s)\frac{\gamma}{q_0\theta^{-\eta}}, \tag{A6}$$

$$\frac{k}{\rho_0\phi^{1-\varepsilon}} = \frac{\beta_\alpha(1-\alpha_\theta)}{1-\alpha_\theta\beta_\alpha}\frac{q_0\theta^{-\eta}}{r+q_0\theta^{-\eta}}\left(\frac{y-b}{s+r} - \frac{\gamma}{q_0\theta^{-\eta}}\right), \tag{A7}$$

$$\frac{c}{\rho_0\phi^{-\varepsilon}} = \frac{(1-\beta_\alpha)(1-\alpha_\theta)}{1-\alpha_\theta\beta_\alpha}\frac{q_0\theta^{-\eta}}{r+q_0\theta^{-\eta}}\left(\frac{y-b}{s+r} - \frac{\gamma}{q_0\theta^{-\eta}}\right). \tag{A8}$$

The unknowns are ω, ρ, α_θ, β_α, γ, u, ϕ, and θ.

Appendix B: Calculation of Costs

To calculate total costs (i.e., $\gamma V + kB$), we calculate the number of vacancies and bankers.

First, the number of vacancies can be obtained directly from the definition of labour market tightness $\theta = \frac{V}{U}$, thus $V = \theta U$. Vacancy posting costs amount to $\gamma V = \gamma\theta U = \gamma\theta u$.

Second, we determine the stock of bankers, B, searching for an entrepreneur. We first determine the number of entrepreneurs in stage 0 that are searching for a financier, say E^0. In equilibrium, the stock of entrepreneurs E^0 is constant, so that inflows into the pool of E^0 are equal to outflows. The number of inflows is the number of firms that split up at a rate s; i.e., $s(1-u)$. The number of outflows is equal to the number of entrepreneurs that find a financier; i.e., $p(\phi)E^0$. We have

$$\begin{aligned}\frac{dE^0}{dt} &= -p(\phi)E^0 + s(1-u)\\ &= 0\\ &\Rightarrow E^0 = \frac{s(1-u)}{p(\phi)}.\end{aligned}$$

We can then determine the number of bankers via the definition of credit market tightness, $B = E^0/\phi$, which gives us

$$B = \frac{s(1-u)}{\phi p(\phi)}.$$

Search costs of banks amount to $kB = k\frac{s(1-u)}{\phi p(\phi)}$.