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EMPIRICAL EQUATIONS TO ESTIMATE THE EFFECT OF THE MINIMUM WAGE ON PRICES

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Abstract

The few price effect studies available in the literature are grounded on the standard theory prediction that if employers do not respond to minimum wage increases by reducing employment or profits, they respond by raising prices. However, none of them explicitly discusses the theoretical model underlying their empirical equation specification. This paper discusses two simple price equation specifications, assuming perfect and imperfect competition in the output market. Each of these was estimated assuming two different production functions. The data used is a Brazilian household and firm survey from 1982 to 2000. Robust results indicate that the minimum wage raises overall prices in Brazil.

Keywords: minimum wage, labour costs, price effect, cost shock, Brazil.

JEL code: J38.

1 Introduction

The few price effect studies available in the literature are grounded on the standard theory prediction that if employers do not respond to changes in the minimum wage by reducing employment or profits, they respond by raising prices (Card and Krueger, 1995; Aaronson, 2001; Machin et al., 2003). However, none of them explicitly discusses the theoretical model underlying their empirical equation specification. Unlike when estimating the minimum wage effect on employment, where employment equations are usually interpreted as labour demand equations or labour market reduced form equations, the minimum wage effect on prices occurs not only via labour demand and labour supply but also via aggregate demand and aggregate supply.

Economic theory establishes various routes through which the minimum wage affects prices: (1) via labour demand, by pushing costs and prices upwards; (2) via labour supply, by increasing labour productivity, pushing prices downwards; or by increasing labour force participation, pushing wages (prices) downwards; (3) via aggregate supply, by decreasing employment and output, pushing wages and prices upwards; and (4) via aggregate demand, by increasing spending, pushing prices upwards; or by stopping those who became unemployed to spend, pushing prices downwards; or by decreasing the demand for (now more expensive) minimum wage labour intensive goods, pushing prices downwards. All these routes, together with a rapidly changing economy, make it very difficult to isolate the price effects due to a minimum wage increase.

The main contribution of this paper is to discuss two simple empirical price equation specifications grounded on theory. First, to account for all routes through which the minimum wage affects prices, a simple standard general equilibrium model is constructed under the assumption of perfect competition in the input and output markets. Second, an alternative specification is then derived under imperfect competition in the output market, where price is a markup over costs. Both the general equilibrium reduced form equation and the imperfect competition profit maximizing equation are estimated assuming two different production functions.

The data used is a Brazilian household and firm survey from 1982 to 2000. There is very little empirical evidence on the effects of the minimum wage on prices in the international literature and none for developing countries. Lemos (2004) surveyed this literature and

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concluded that a 10% minimum wage increase raises food prices by no more than 4% and overall prices by no more than 0.40%. However, this evidence might not carry out to other developed and developing countries, and further evidence is urged. Thus, another contribution of this paper is to provide this much needed evidence. This will extend the current understanding on the effects of the minimum wage on prices and also the current understanding of the effect of the minimum wage in developing countries.

The results are robust to the various alternative specifications allowing different forms of dynamics when using the imperfect competition reduced form equation – and indicate that the minimum wage significantly raises overall prices in Brazil – but are sensitive to the specific dynamics modelling when using the general equilibrium reduced form equation. This paper is organized as follows. Section 2 presents the data. Section 3 provides the theoretical foundation for the empirical equations estimated in Section 4 (Section 4.1). Section 4 discusses identification (Section 4.2), presents the results (Section 4.3) and performs robustness checks (Section 4.4). Section 5 concludes.

2   Data and Descriptive Analysis

The nominal minimum wage in Brazil, in most of the sample period, was used as a deflationary policy, via erosion of the real minimum wage. That is because of the impact of the nominal minimum wage both on the inflation – as it often triggered a wage-price inflation spiral – and on the public deficit – as it is linked to benefits, pensions, and the public sector wage bill. As a result, the real minimum wage fell steeply over time. After the acceleration of inflation, in the mid 1980s, the nominal minimum wage adjustments followed the rules of five different stabilization plans. Since the mid 1990s, under reasonably low inflation, the nominal minimum wage has been annually adjusted.

The price data used is the Consumers Price Index (IPC). Although consumer price indices suffer from several drawbacks to study price responses (Poterba, 1996), they have been used in the exchange rate, sale taxes, and minimum wage price pass-through literature (Poterba, 1996; Card and Krueger, 1995). Figure 1 shows the log nominal minimum wage and log prices in differences (the timing of the five stabilization plans are indicated in the horizontal axis). The two are remarkably synchronized, with a raw correlation of 0.55; this

synchronized path was also documented for the US (Aaronson, 2001).

The remaining data is from PME (Monthly Employment Survey), PIM (Pesquisa Industrial Mensal), SONDA (Sondagem Industrial) and BACEN (Banco Central do Brasil). All data is monthly aggregated across the six main Brazilian metropolitan regions (Salvador, Recife, Belo Horizonte, Rio de Janeiro, Sao Paulo and Porto Alegre) between 1982 and 2000. The data is available from the IBGE (Instituto Brasileiro de Geografia e Estatistica) and FGV (Fundacao Getulio Vargas).

3 Theoretical Grounding

Two simple theoretical price equations are here discussed. They are the grounding to deliver the empirical price equations used to estimate the effect of the minimum wage on prices in Section 4. First, a simple standard general equilibrium model is constructed under the assumption of perfect competition in the input and output markets. Second, an alternative specification is then derived under imperfect competition in the output market, where the price is a markup over cost.

3.1 General Equilibrium Model

Assume perfect competition in both the input and output markets, and a production function depending on labour L and capital K, $Y=fLK(L,K)$, with input and output prices wages W, interest rate r, and prices P. Maximization of profits at the (representative) firm level delivers the aggregate unconditional demand for labour, $L^d=L(P,W,r)$, which can be re-written as $P=P_1(Ld,W,r)$. There is no sense in a price equation at the (price-taker) firm level, but at the industry level, the labour demand function is well defined. The minimum wage then affects prices through its effects on wages and on productivity. If the production function depends on capital and two types of labour (where W is the wage for high skill labour and MW is the wage for low skill labour), then the minimum wage enters the equation directly, $P=P'_1(Ld,W,MW,r)$. This shows the relationship between aggregate prices and labour demand that follows from the firm behavior. However, this equation might not be very informative, as it tells what happens to prices when the minimum wage changes, holding constant employment. The specification estimated by Aaronson (2001) can be thought

of as a labour demand curve.

If labour supply is assumed to depend on wages and prices, $L^s = L(P, W, L^s\text{-}shifters)$, where $L^s\text{-}shifters$ are supply shocks; and $L^s = L^d = L$ is used to eliminate W, the labour market equilibrium condition is $P = P_2(L, r, L^s\text{-}shifters)$. The minimum wage can be included among the supply shocks or, as above, enter the equation directly, $P = P'_2(L, MW, r, L^s\text{-}shifters)$. This equation tells what happens to prices when the minimum wage changes, accounting for the response of firms and workers, holding constant other input prices, employment and labour supply shifters.

If now the production function Y is used to substitute out L, the aggregate supply equation is $P = P_3(Y^s, r, K, L^s\text{-}shifters)$ or $P = P'_3(Y^s, MW, r, K, L^s\text{-}shifters)$. Subtracting and dividing both sides by lagged price delivers the Phillips curve. This equation summarizes the possible combinations of price and output that equilibrates the labour market. Once more, it might not be very informative, as it tells what happens to prices when the minimum wage changes, holding output constant.

Most people will adjust their spending in response to higher prices. This determines whether and where jobs are lost and employment and output are cut in the longer run. As a result, the relationship between prices and the minimum wage needs to account not only for aggregate supply but also for aggregate demand effects. If $Y^d = Y^s = Y$ is used, where $Y^d = f(P, Y^d\text{-}shifters)$, and $Y^d\text{-}shifters$ are demand shocks; the equilibrium condition is $P = P_4(r, K, L^s\text{-}shifters, Y^d\text{-}shifters)$ or $P = P'_4(MW, r, K, L^s\text{-}shifters, Y^d\text{-}shifters)$.[1] This equation differs from previous ones because, in econometrics parlance, is a reduced form. It tells what happens to prices when the minimum wage changes, accounting for responses of firms, workers and consumers; i.e. it accounts for the interaction of all the above variables and their joint effect on prices. The (net) minimum wage coefficient is positive because the minimum wage increase causes the economy to contract and prices to increase. The specifications estimated by Card and Krueger (1995), Sprigs and Klein (1994) and Machin et al. (2003) can be thought of as reduced form equations.

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[1] One of the Yd-shifters has to be a nominal variable (e.g. nominal Government expenditure or the money stock) to ensure that Yd (P) is homogeneous of degree zero (one) in nominal magnitudes.

3.2 Imperfect Competition Model

Assume a number of identically imperfectly competitive firms, each one of them with some market power; say that firms and consumers differ in their physical location and each firm has its own market area. If a demand and a cost relation are specified and the resulting profit maximizing condition is inverted, a price equation is obtained, where price P is a markup over costs C, $P=[e/(1+e)]C$, and e is the price elasticity of demand. Note that the two main components of costs are labour productivity and wages (and the minimum wage affects both), which are already accounted for in the first equation of the above general equilibrium model. Indeed, relaxing the price taking assumption does not change dramatically the above specification – the cost function is the same for both monopolists and competitive firms – although it gives a different flavour to the interpretation of the results. The crucial difference here is that while for competitive markets, price is exogenous and the price equation is a standard labour demand function, for price-setter firms, the price equation reveals a relationship that must hold for profit maximization but it is not a labour demand function, because prices are chosen jointly with employment. The minimum wage coefficient is expected to be positive: a minimum wage increase raises labour costs and prices of the entire industry.

4 Empirical Specification and Identification

The 0.55 raw correlation between log nominal minimum wage and log price discussed in Section 2 needs to be proved robust when the effect of other variables (demand and supply shocks) on prices is controlled for. The particular choice of controls is given by theory in Section 3. Given that so little work has been done in this area, the approach of this paper is rather exploratory, aiming at a theoretically informed statistical investigation. The strategy here is to estimate various specifications grounded on the two models discussed in Section 3 in order to check the robustness of the minimum wage effect to alternative controls.

4.1 Empirical Equations

While empirical work on the price response to minimum wage increases is limited, there is a large empirical literature on the price response to changes in other industry wide costs, such

as sales taxes and exchange rates (Poterba, 1996; Goldberg and Knetter, 1997). Because of this, the empirical equation delivered by the theoretical models in Section 3 will be discussed in the light of this so-called pass through literature. This literature is primarily concerned with the burden of higher costs on consumers, and thus is well suited to study the extent to which higher labour costs associated to minimum wage increases are passed on to consumers. The primary objective is to measure whether 100% of the shock is passed through or not. This is estimated by a reduced form equation where price is explained by a cost shock and other controls (grounded on the imperfect competition model in Section 3).

Together with the pass-through literature, the aggregate supply and Phillips curve empirical literature (grounded on the general equilibrium model in Section 3) also provides guidance for empirical price equations specification. Econometric explanation of inflation requires not only inertia and aggregate demand variables, but also supply shocks (e.g. oil price, exchange rate, productivity growth, etc.) and Government intervention or push-factors (e.g. minimum wage, social security taxes, employment protection, unions, etc.) (Ball et al., 1988; Gordon, 1982; Staiger et al., 1996).[2]

Approximating the theoretical price equations discussed in Section 3 by a logarithmic function and modelling time and regional fixed effects using dummies, the following empirical price equation is obtained:

$$\Delta \ln P_{it} = \alpha + \sum_{l=-k}^{L} \beta_l \Delta \ln MW_{t-l} + \delta \Delta r_{it} + \varsigma \Delta \ln C_{it} + \kappa \Delta \ln K_{it} + \lambda \Delta Z_{it} + \sum_{m=1}^{M} \rho_m \Delta \ln P_{it-m} + f_i + f_t + v_{it}$$

where for region i and time t: P_{it} is prices; MW_t is nominal minimum wage; r_{it} is real interest rate, defined as the national nominal interest rate minus regional inflation; C_{it} is costs; K_{it} is capital; Z_{it} is labour supply and aggregated demand shifters; f_i is regional fixed effects; f_t is time fixed effects; and v_{it} is the error term. Labour supply shifters control for region specific demographics potentially correlated with the minimum wage, e.g. the proportion of workers in the population who are: youngsters, children younger than 10 years old, women,

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[2] In addition to push-factors, two other reasons serve as justification for the minimum wage entering the price equation in Brazil. First, the minimum wage can be regarded as a proxy for expectations. As the minimum wage often triggered wage-price inflation spirals, rational agents took minimum wage increases as a signal for price and wage bargains (see Section 2). Second, the minimum wage affects the public deficit. As the deficit is often financed by expansionist monetary policy, again agents took increases as a signal of higher prices (see Section 2).

illiterate, retiree and student; working in the informal sector, in the public sector, in the building construction and in the metallurgic industry; working on two jobs; with basic and high school education and the average number of years of education. Aggregate demand shifters include taxes and capital investment.

Assuming that the static specification is valid at each period, lags and leads of the shock variable are included to allow the effect of the minimum wage on prices to be complete, and lags of the dependent variable are included to account for lagged adjustment in prices due to the inability to adjust other inputs instantaneously to minimum wage increases. The number of lags and leads is an empirical matter and is discussed in Section 4.3.

As direct data on costs is not observed, and as the main components of costs are wages (and minimum wage) and interest rate, these are used as empirical measures of costs. In addition, a measure of power cost and a measure of productivity are included. The new equation is:

(1) $\Delta \ln P_{it} = \alpha + \sum_{l=-k}^{L} \beta_l \Delta \ln MW_{t-l} + \gamma \Delta \ln W_{it} + \delta \Delta r_{it} + \epsilon \Delta \ln E_{it} + \mu \Delta \ln A_{it} + \kappa \Delta \ln K_{it} + \lambda \Delta Z_{it} + \sum_{m=1}^{M} \rho_m \Delta \ln P_{it-m} + f_i + f_t + w_{it}$

where W_{it} is average nominal wages; E_{it} is industrial power consumption; A_{it} is the total industrial production divided by total number of workers directly employed in production in the metallurgic industry; and w_{it} is the new error term.

Several coefficients are in turn constrained to zero. The starting place is an *ad hoc* specification where α nnd β only are allowed to be nonzero. The empirical counterpart of the general equilibrium reduced form price equation is obtained if α, β, δ, κ, and λ are nonzero, and the imperfect competition profit maximizing equation, if α, β, γ, δ, ϵ and μ are nonzero. Each of these two equations was estimated assuming two production functions, $Y=f_L(L)$ and $Y=f_{LK}(L,K)$. Assuming that labour is the only variable factor in the long run is equivalent to constraining the coefficients of capital and real interest rate (δ and κ) to zero. All models in the paper are sample size weighted to account for the relative importance of each region (and for heteroskedasticity arising from aggregation), as well as corrected for serial correlation across and within regions, assuming an autoregressive process specific to each region.

4.2 Identification

Most minimum wage price effect studies use the nominal minimum wage as their shock variable. Aaronson (2001) exploit the regional variation in nominal minimum wage in his price equations for the US. However, the minimum wage is national in Brazil and full identification requires the shock variable to vary across regions. The typical minimum wage variable used in minimum wage studies is "Kaitz index" (Kaitz, 1970), defined as the ratio of the minimum wage to average wage adjusted for coverage of the legislation. Although the Kaitz index varies across regions and over time, the variation in average wages is what drives the variation in the ratio. As a result, the effect of the inverse of the average wages on prices is what would be ultimately estimated (Welch and Cunningham, 1978).

Another minimum wage variable used in minimum wage studies is "fraction affected", defined as the proportion of workers earning a wage between the old and the new minimum wage (Card, 1992). Card and Krueger (1995) and Spriggs and Klein (1994) used this variable in their price equations for the US. Brown (1999, p. 2130) advocates that the "degree of impact" measures (e.g., "fraction affected") are conceptually cleaner than the "relative minimum wage" variable (e.g., Kaitz index). He also notes that "fraction affected" is "not well-suited for studying periods when the minimum wage is constant, and so its impact should be declining. While there is more to be learned from a year in which the minimum wage increases by 10 or 15% more than average wages than from a year of modest decline, the periods between increases should together contain about as much information as the periods of increase." In other words, "fraction affected" is constant at zero regardless of how unimportant the minimum wage might become.

A variable closely related to "fraction affected" is "fraction at" the minimum wage, defined as the proportion of workers earning one minimum wage (Dolado et al., 1996) (plus or minus 0.02%, to account for rounding approximations). "Fraction at" is conceptually related to "fraction affected" but does not suffer from the same drawback, as it can be defined even when the minimum wage is constant. Beyond statistical identification, "fraction at" is a measure of wage (price) inflation and thus well suited to study minimum wage price effects. Its correlation with the real minimum wage and the Kaitz index in the sample period is respectively 0.61 and 0.67.

"Fraction at" replaces log nominal minimum wage in Equation (1). To reflect a 10%

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increase in the minimum wage, all estimates in the paper are multiplied by 0.6, which is the approximate elasticity of "fraction at" with respect to the nominal minimum wage.[3] Card and Krueger (1995) interpret their "fraction affected" estimates in a similar manner.

4.3   Results

Panel I of Table 1 shows positive and significant WLS β estimates which are robust across specifications. The estimate using the *ad hoc* specification suggests that a 10% increase in the minimum wage raises prices by 0.02%. This is robust when using the more complete (static) specifications (see column 1): a 10% increase in the minimum wage raises prices by 0.02% (0.03%) when using the general equilibrium (imperfect competition) reduced form equation. Two forms of dynamics were allowed in turn.

First, the effect of the minimum wage on prices was allowed to take several months to be complete. The short run effect was unchanged (see column 2). Neither the first (see column 3) nor further lags of the shock variable were statistically significantly different from zero. This suggests that the relevant effect of the minimum wage on prices happens in the month of the increase. As a result, the associated long run estimate after one month of adjustments (see column 4) was also statistically not different from zero in the general equilibrium reduced form equations, although it was larger and significant in the imperfect competition reduced form equations. The long run coefficient using this specification indicates that a 10% increase in the minimum wage raises prices by 0.04%.

The short dynamics here are in line with the rapid wage-price inflation spiral in Brazil, as discussed in Section 2. Aaronson (2001) included lags and leads in his specifications and found that most of the prices response occurs in the two month period immediately after a minimum wage increase, while the remainder occurs in a two month window around this. They argue that these are short dynamics for the US and that they are due to the fact that minimum wage changes do not generate the sort of coordination failure and stickiness in prices that other costs or demand shocks produce.

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[3] The 0.6 estimate is the coefficient of the nominal minimum wage on a regression of "fraction at" on the difference of log nominal minimum wage and the other regressors in Equation (1). However, because the nominal minimum wage does not vary across regions in Brazil, the Kaitz index (using not only average wage, but also median wage as the denominator) was used instead. The 0.6 estimate was robust across specifications.

Second, adjustment costs in response to minimum wage increases were allowed to take several months to be complete. Initially, only the first lag of the dependent variable was included. The short (long) run coefficients are now marginally smaller (larger), but only (only just) significant when using the imperfect competition reduced form equation (see columns 5 and 6). Then, in addition to the first, the second lag of the dependent variable was also included. The results when using the imperfect competition reduced form equation were basically unchanged. The short (long) run coefficient when using this specification indicates that a 10% increase in the minimum wage raises prices by 0.02% (0.12%). This is the largest long run coefficient so far, suggesting that there is some delayed response in prices due to non-instantaneous adjustment in other inputs following a minimum wage increase.

The preferred specification is the one using the imperfect competition reduced form equation, allowing for lagged dynamics and controlling for the real interest rate (second row, columns 7 and 8 of Panel I). Using this specification, a 10% increase in the minimum wage raises prices by 0.02% in the month of the increase, and by 0.12% after two months of adjustments. This is smaller than the effect in the (mostly US) international literature. Nonetheless, it is a very robust result. In this specification, most of the variation in prices is explained by dynamics, region and time fixed effects. Thus, confidence is great that the remaining variation in prices really is due to minimum wage changes.

4.4   Robustness Checks

Although the effect of the interest rate, common macro shocks and region specific growth trends are separated from the effect of the minimum wage on prices in the preferred specification in Section 4.3, the minimum wage variable might still be picking up the effect of regional shocks on (wages and) prices. That is because the minimum wage variable – recall that "fraction at" is the proportion of workers earning one minimum wage (see Section 4.2) – can be affected by both minimum wage changes and by other regional variable changes. Thus, Equation (1) is modified to include a variable to control for changes in wages of the low paid across regions caused by variables other than the minimum wage. The new equation is:

(2) $\Delta \ln P_{it} = \alpha + \sum_{l=-k}^{L} \beta_l \Delta F_{it} + \beta^{FW} \Delta F_{it} \Delta \ln W_{it}^{20} + \beta^W \Delta \ln W_{it}^{20} + \gamma \Delta \ln W_{it} + \delta \Delta r_{it} +$

$\epsilon \Delta \ln E_{it} + \mu \Delta \ln A_{it} + \kappa \Delta \ln K_{it} + \lambda \Delta Z_{it} + \sum_{m=1}^{M} \rho_m \Delta \ln P_{it-m} + f_i + f_t + u_{it}$

where, F_{it} is "fraction at", W_{it}^{20} is the 20th percentile of the log nominal wage distribution and u_{it} is the new error term.

All models in Section 4.3 are re-estimated and the WLS β estimates are shown in Panel II of Table 1. The results are qualitatively unchanged. The pattern of signs and significance is fairly similar, although the estimates are now marginally larger and more robust. The β^{FW} estimates are not statistically different from zero. Using the analogue of the preferred specification from Section 4.3 (second row, columns 7 and 8 of Panel II), a 10% increase in the minimum wage raises prices by 0.02% in the month of the increase, and by 0.13% after two months of adjustments. These results are also robust to replacing the 10th by the 20th percentile of the log nominal wage distribution in Equation (2). This is the most demanding specification so far and the results are remarkably robust, which is very reassuring that the minimum wage raises overall prices in Brazil.

5   Conclusion

This paper estimates the effect of the minimum wage on prices using monthly Brazilian household and firm data for the 1980s and 1990s. Given that so little work has been done in this area, the approach is rather exploratory, aiming at a theoretically informed statistical investigation. Two simple price equation specifications were used – a general equilibrium reduced form equation and an imperfect competition profit maximizing equation – each of which was estimated assuming two different production functions. Also, several robustness checks allowing for different forms of dynamics were performed.

The results using the imperfect competition profit maximization equation were remarkably robust and indicate that the minimum wage raises overall prices in Brazil. A 10% increase in the minimum wage raises prices by 0.02% in the month of the increase, and by 0.12% after two months of adjustments. These results are in line with theory and with previous empirical results in the international literature, which reports less than 0.40% overall price effects. The results using the general equilibrium reduced form equation were robust to including lags of the shock variable but not to including lags of the dependent variable. A tentative explanation is that these are quite demanding specifications, in which the vari-

ation in prices is explained by a number of labour supply and aggregate demand shifters, region and time fixed effects and mostly by its own lags. This might be wiping away all the relevant variation in the model.

The main policymaking implication deriving from these results is that the minimum wage causes moderate to low inflation in Brazil. This, combined with sizeable wage increases and small employment increases in Brazil, suggests that the minimum wage has a concrete potential to alleviate poverty and inequality. Nonetheless, further evidence is urged to check the robustness of these results. Many and independent data points are needed. Evidence on the effect of the minimum wage on prices, in particular in developing countries, is currently very limited. Thus, this is a fruitful and much needed avenue of research.

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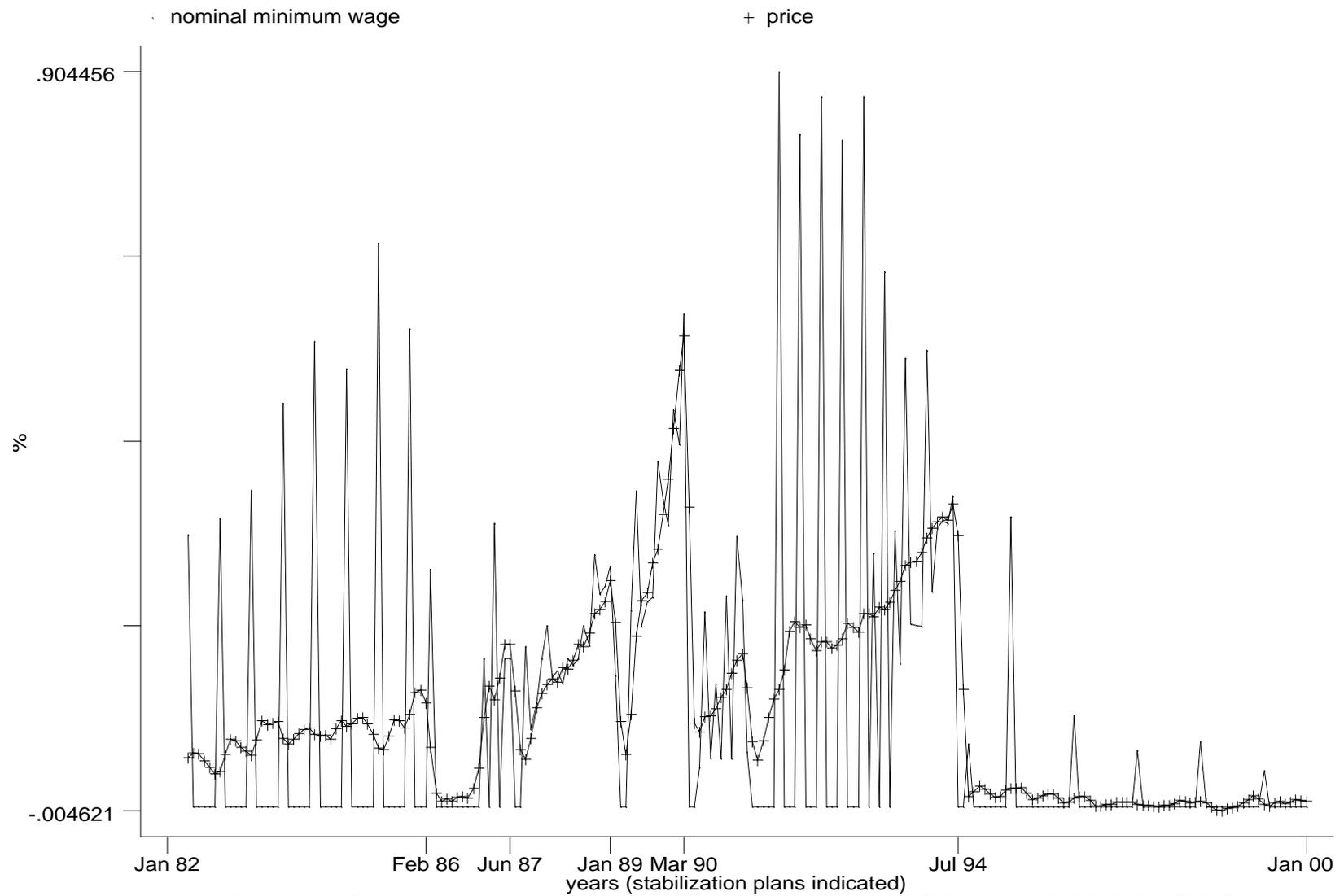
Figure 1 - log NOMINAL MINIMUM WAGE AND log PRICE IN DIFFERENCES

Table 1 - EFFECT OF A 10% INCREASE ON THE MINIMUM WAGE ON PRICES

models	static sr		dynamic — including one lag of shock variable sr		first lag		lr		including one lag of dependent variable sr		lr		including two lags of dependent variable sr		lr	
	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se	coef	se
	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
(I) NO INTERACTIONS																
ad hoc	0.02	0.01														
(A) Y=f$_L$(L)																
General Equilibrium	0.02	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.05	0.07	0.01	0.01	0.03	0.07
Imperfect Competition	0.03	0.01	0.03	0.01	0.01	0.01	0.04	0.02	0.02	0.01	0.12	0.07	0.02	0.01	0.12	0.06
(B) Y=f$_{LK}$(L,K)																
General Equilibrium	0.02	0.01	0.02	0.01	0.01	0.01	0.03	0.02	0.01	0.01	0.05	0.09	0.00	0.01	0.02	0.09
Imperfect Competition	0.03	0.01	0.03	0.01	0.01	0.01	0.04	0.02	0.02	0.01	0.14	0.08	0.02	0.01	0.12	0.07
(II) INTERACTIONS WITH 20TH PERCENTILE OF THE NOMINAL WAGE DISTRIBUTION																
(A) Y=f$_L$(L)																
General Equilibrium	0.02	0.01	0.02	0.01	0.01	0.01	0.03	0.02	0.01	0.01	0.05	0.07	0.00	0.01	0.03	0.07
Imperfect Competition	0.04	0.02	0.04	0.02	0.00	0.01	0.04	0.02	0.03	0.01	0.14	0.07	0.02	0.01	0.13	0.06
(B) Y=f$_{LK}$(L,K)																
General Equilibrium	0.02	0.01	0.03	0.01	0.01	0.01	0.04	0.02	0.01	0.01	0.05	0.09	0.00	0.01	0.02	0.09
Imperfect Competition	0.04	0.01	0.05	0.02	0.01	0.01	0.05	0.02	0.02	0.01	0.15	0.08	0.02	0.01	0.13	0.07

(a) The dependent variable is the difference of logs of prices. The shock variable is the "fraction at".

(b) Time effects are modelled with month dummies, region effects are modelled with region dummies; labor supply
    and aggregate demand shifters are included as controls, depending on which theoretical model underlines the empirical equation.

(c) Two theoretical models are used, a general equilibrium reduced form price equation and an imperfect competition profit maximizing condition.
    For each of them, two different production functions are used.

(d) These are GLS estimates, where the weights are the squared root of the inverse of the sample size. Standard errors are corrected for serial
    correlation across and within regions (assuming an autoregressive process specific to each region).

(e) Panel I shows models where the difference of "fraction at" appears on its own whereas Panel II shows models where in addition,
    fraction at is interacted with the 20th percentile of the wage distribution. The interaction term is not significantly different from
    zero in all specifications and is therefore not reported here.

(f) Column 1 shows coefficient estimates for static models, columns 2 and 3 show the contemporaneous and lagged coefficient
    estimates for dynamic models including one lag of the shock variable, and column 4 shows long run coefficient estimates associated to columns 2 and 3.
    Column 5 and 6 (7 and 8) again show contemporaneous and long run coefficient estimates for dynamic models including one (two) lags
    of the dependent variable.

(g) To reflect a 10% increase in the minimum wage, the estimates and standard errors were multiplied by 0.6, which is the
    approximate elasticity of the minimum wage with respect to "fraction at".