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Are Labor Market Policies to Blame?

Martin Rama

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Summary findings

It seems natural to attribute to wage rigidity (stemming from highly distortionary labor policies) the over-valuation of the CFA franc after the negative external shocks of the 1980s. Using a variety of data sources, Rama assesses the actual rigidity of wages in CFA countries and the relationship of wage rigidity to labor policies. He shows that:

- Workers' wages are higher in CFA countries than in similar countries outside the CFA zone and higher than the earnings of similar self-employed workers within the same countries.
- Real wages are rigid (in the sense of closely following fluctuations in government wages and consumer prices) but there is no evidence of nominal wage rigidity.

- Labor policies may not be the source of wage misalignment and real rigidity. When compared internationally, minimum wages in CFA countries are not high enough to account for the observed wage misalignment, and their adjustment over time has been responsive to real shocks.

- Unions in the private sector seem to have been more instrumental in creating wage moderation than in creating wage drift in CFA countries. Their members usually get lower wages than similar nonunionized workers, probably because of the subordinate nature of the labor movement in CFA countries.

- Government pay policies and (possibly) limited competition in product markets are the most probable causes of wage misalignment and real wage rigidity in CFA countries.

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Wage Misalignment in CFA Countries: Are Labor Market Policies to Blame ? (*)

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1. Introduction

In January 1994 the CFA Franc was devalued from 50 to a 100 per French Franc. This devaluation marked the end of almost half a century of pegged exchange rates between the thirteen countries which nowadays make the *Communauté Financière Africaine* and their former colonial power.¹ The 50 to 1 parity had been set in October 1948, at a time when CFA stood for *Colonies Françaises d'Afrique*. Ever since, the French Treasury has guaranteed the convertibility of the CFA Franc. In return, CFA countries were supposed to follow strict rules of monetary discipline. Not surprisingly, their inflation has been significantly lower than that of other African countries (Devarajan and Rodrik, 1991; Conway and Greene, 1993). For some time, it seemed that their growth performance was better too. Côte d'Ivoire, for instance, used to be considered an economic "miracle" in the late 1970s. But this positive assessment was later put in doubt (Assane and Pourgerami, 1994; Savvides, 1995).

At the roots of the 1994 devaluation lies a dramatic fall of export prices for cocoa, coffee and oil, as well as a substantial appreciation of the French Franc against the dollar. At first, an effort was made to cut government expenditures and raise tax revenue. But this strategy failed to achieve the deflation that was required to restore competitiveness. A consensus gradually emerged: the problem was the downward rigidity of prices, resulting in turn from the downward rigidity of formal sector wages. In the presence of a nominal rigidity, devaluing the CFA Franc appeared as the only way out of the recession. After the devaluation, there is some concern that labor market rigidity may create future cycles of

¹ The *Communauté Financière Africaine* is actually made of two zones, based on similar but separate agreements with France. The west zone includes Burkina Faso, Benin, Côte d'Ivoire, Mali, Senegal and Togo. The central zone includes Cameroon, Central African Republic, Chad, Congo and Gabon.

declining competitiveness, stagnant output, recurrent devaluations and ever-rising inflation. If the fixed exchange rate regime is to be kept, it is key to ensure that wages are flexible.

Labor market policies and institutions are a natural candidate to explain the stubborn currency over-valuation observed in CFA countries. These countries replicated the kind of labor legislation adopted by France immediately after World War II, with a vengeance. There were national minimum wages, but also detailed salary grids setting the minima for workers in each sector at every level of employment, based on their formal training and seniority. Layoffs required a government authorization that was highly political in nature and could take months or even years to be granted, if at all. In some countries, hiring was under strict government control too, through large and inefficient placement offices centralizing information on vacancies and job seekers. Finally, trade unions were well implanted in the formal sector of the economy, partly due to their role in the process that led to independence from France, but also because of significant barriers to competition in product markets.

The goal of this paper is to evaluate whether and how the labor market policies characterizing CFA countries contributed to the currency over-valuation observed before the 1994 devaluation. Note that the “how” issue is as relevant as the “whether” issue. Labor market policies and institutions may be a source of wage rigidity in two substantially different ways. Formal sector wages may be high due to legal minima and mandated benefits. In this case there is a *nominal* wage rigidity, implying that wages cannot decline in monetary terms. The effects on nominal rigidity on competitiveness can be offset through devaluation. But private sector wages can also be high due to trade union activities, to government pay policies, to incumbent workers taking advantage of large hiring and firing costs, or to employers and employees sharing the rents created by imperfectly competitive product markets. In these latter cases there is a *real* wage rigidity, usually involving relatively stable ratios between formal sector wages on the one hand and government wages and consumer prices on the other hand. In the medium run, devaluation can do little to affect these ratios, hence to restore competitiveness.

Unfortunately, the literature is not of much help regarding the link between labor market policies and currency over-valuation in developing countries. Even in studies done by or for the World Bank, different views can be found. For instance, López and Riveros (1990) examined data from four Latin American countries and concluded that distortions in the formal labor market were a source of real wage rigidity, implying a low responsiveness of the real exchange rate to devaluation. But on the other hand, Horton, Kanbur and Mazumdar (1994) considered a broader set of countries and concluded that inflation was effective in reducing real wages, thus raising the real exchange rate. It is probably difficult to find more opposite views on any economic issue. Given this ambiguity of the literature, a careful analysis of labor markets in CFA countries is warranted.

2. Policies Affecting Wages

a) Main features

The CFA zone is characterized by some of the heaviest labor market regulations in the world applied to some of its tiniest formal sectors. As Table 1 shows, employment in firms and agencies complying with regulations represents at most 5 percent of the labor force. Furthermore, roughly half of this employment is in the public sector. Only a handful of private sector firms is therefore confronted to minimum wages, hiring and firing constraints and other labor market regulations. At a first glance, the small size of formal sector employment suggests that labor market policies and institutions are essentially irrelevant in CFA countries. However, most of the exports from these countries, as well as a key portion of the inputs used in the rest of their economies, are handled by formal sector firms. It is therefore of paramount importance to understand how these firms are affected by labor market policies and institutions.

Table 1

The Potential Coverage of Regulations

| Country | Labor force (thousand persons) | Formal sector employment (thousand persons) | |
|--------------------|--------------------------------------|--|--------|
| | | Private | Public |
| Burkina Faso | 4167.1 | 35.6 | 34.2 |
| (1990, 1993, 1991) | [100.0] | [0.9] | [0.8] |
| Central African R. | 1384.5 | 13.0 | |
| (1990) | [100.0] | [0.9] | |
| Côte d'Ivoire | 4598.6 | 131.5 | 116.0 |
| (1990) | [100.0] | [2.8] | [2.5] |
| Mali | 2958.7 | | 40.2 |
| (1990, 1991) | [100.0] | | [1.4] |
| Niger | 3619.0 | 15.8 | 39.7 |
| (1990, 1991, 1991) | [100.0] | [0.4] | [1.1] |
| Senegal | 2347.6 | 79.6 | 66.3 |
| (1988) | [100.0] | [3.4] | [2.8] |
| Togo | 1396.3 | 22.4 | 33.7 |
| (1990, 1991, 1991) | [100.0] | [1.6] | [2.4] |

Notes: Figures in parenthesis indicate the years the data refer to, while figures in brackets are percentages of the labor force. The formal private sector may include state-owned commercial firms in some countries. Data on the labor force for all countries, except Senegal, are from the International Labour Office. Data on private sector employment in Côte d'Ivoire are from the *Banque de Données Financières*. In Senegal, they are from *Banque de Données Economiques et Financières*. Other data for Senegal are from the Ministry of Finance. For other countries, data on formal sector employment are from the *Statistiques Economiques* of BCEAO.

The purpose of this section is to describe the institutional setting of CFA countries in a way which is general enough to fit most of them. Specific examples are given though, particularly in the case of Côte d'Ivoire and Senegal, which are the two biggest economies in the CFA zone. Among the countries for which data on the potential coverage of regulations could be assembled, Côte d'Ivoire and Senegal are also those with the largest formal sectors in proportion of their labor force (see Table 1). Since the effects of labor market policies and institutions should be larger too, these two countries will implicitly provide a benchmark when assessing the distortions created by the current institutional setting.

The colonial administration took a dominant role in the establishment of labor policies for what are nowadays the CFA member countries. The first measures were introduced as early as 1926. A *Code du Travail* was implemented for all overseas territories in 1952, partly as a result of a strike organized and led by Guinea's Sekou Touré with the support of France's communist labor unions. For most of the period after independence from France, this code served as the basis for labor market regulation at the country level. Government pay policies were partly inherited from the colonial period too. In 1950, a statute known as the second Lamine Gueye law equalized pay between African and French employees of the colonial administration. As a result, at independence the average wage in the Ivorian civil service was more than twice that of an industrial worker (Niessen, 1995).

For decades, labor market policies in CFA countries were characterized by four main features: extended reliance on minimum wages, detailed salary grids by occupation and experience for all firms in sectors with collective bargaining, centralized hiring mechanisms, and stringent constraints on firing. Other labor market interventions, such as payroll taxes and mandated benefits, do exist in CFA countries, but they do not seem to be particularly onerous compared to other developing areas. For instance, in Côte d'Ivoire workers enrolled with the social security system have to contribute 4 percent of their salary to the old-age pension program, and an additional 5.5 percent to the family allowances program. While

contributions to the social security system represent a tax rather than a delayed payment, at 9.5 percent the tax rate is not particularly out of line compared to other countries.

Minimum wages were introduced in most CFA countries in the 1960s, and have been sporadically adjusted upwards ever since. Two different national minimum wages exist: one for urban workers (the SMIG), the other for agricultural laborers in large plantations (the SMAG). But urban workers in sectors with collective bargaining have their minimum wages set by highly detailed salary grids (the *Salaires Minimaux Conventionnels*). The lowest level in these grids is usually equal to the SMIG, sometimes augmented by a small premium. Other levels vary across occupations and increase with seniority, but the overall structure is relatively stable over time. These grids are negotiated between trade unions and employers' associations, but have legal force for all workers and firms in the corresponding sector.

Collective bargaining outcomes obviously depend on the strength of the labor movement. In CFA countries, trade unions are often numerically small, with the possible exception of Senegal (see Bergen, 1997). And except in the public sector, they tend to be relatively weak. But the ability of the labor movement to affect labor market outcomes should not be judged based on its membership only: the nature of its links with the government and political parties matters too. For a long time, private sector unions were under firm government control in countries like Burkina Faso, Côte d'Ivoire and Gabon, thanks to the co-optation of union leaders by the ruling party. Public sector unions, on the other hand, have a significant impact on government pay policies and are in some cases independent from the ruling party.

Until quite recently, a third important feature of labor market policies in CFA countries was the legal monopoly the government had over hiring decisions. On paper at least, all vacancies had to be reported to central placement offices which also were supposed to register all job searchers and to make all placements. Private firms were not allowed to bypass these offices and advertise their vacancies, say

through the press. Only a few private sector placement agencies existed, usually operating under cover as training providers. Moreover, the government offices tended to be highly inefficient. For instance, the *Office de la Main-d'Oeuvre de la Côte d'Ivoire* (OMOCI), with 175 employees in its payroll, only managed to make an average of 3440 placements per year in 1988-91. In Togo, there were a meager 152 placements per year during the same period, which represents roughly 0.3 percent of total employment in the formal sector of the economy (Runner, 1992).

Countries in the CFA zone were also characterized by significant firing costs. At a first glance, these costs may not look excessively high by international standards. In Côte d'Ivoire, for example, mandated severance is set at 40 percent of the monthly wage for each of the first five years of service, and the percentage declines for subsequent years. Even counting the advance notice compensation, which may amount to three months of salary, total severance pays remains within the standard range for countries at that level of development. The problem is a worker "abusively" fired has the right to an indemnity (*dommages et intérêts*) from his or her employer. And any layoff for economic reasons used to be considered "abusive" by the tribunals, which set the indemnity at the equivalent of several yearly salaries.

b) Recent trends

The labor market policies of CFA countries have experienced significant changes in recent years. The depth of these changes varies across individual countries, and is still negligible in some of them. But there is a clear trend towards greater flexibility in all of the four areas discussed above. In Cameroon, the enforcement of labor laws was deliberately weakened after 1982 (Barba Navaretti *et al.*, 1996). In Côte d'Ivoire, the emergence of a new trade union confederation in 1990, reflecting the general drive towards more democracy, introduced competition in collective bargaining. Also, the

suppression of the government monopoly over hiring decisions, in 1991, allowed private sector firms in the formal sector to recruit by themselves or, more precisely, to do it openly. In Senegal, the possibility of renewing temporary contracts over many years, introduced in 1987 and extended in 1989, implicitly eliminated firing costs for newly hired workers. In all three countries, a gradual recognition that economic layoffs should not be treated in the same way as “abusive” ones has significantly reduced the cost of restructuring.

Problems remain in several areas though. Competition between the incumbent trade union confederation and newcomers brought in a wave of wildcat strikes to Côte d’Ivoire, rather than a drive towards wage moderation. The government offices which were in charge of placements were given new mandates of dubious utility, imposing an unnecessary burden on private sector firms. In Côte d’Ivoire, the OMOCI (re-baptized AGEPE) wants to keep track of recruitment by individual private firms to “observe” labor market developments. Something similar happens in Senegal, where copies of labor contracts pile up in a room until it is full, and then are burned to allow the process to commence again. The AGEPE is also running a series of European-type programs targeted at the reduction of unemployment, while it is unclear whether Côte d’Ivoire really faces an open unemployment problem.

c) Enforcement

Finally, it is important to distinguish between regulation and practice. Labor market policies which look distortive on paper may not be very harmful if standards are set at relatively low levels, or if the administrative capability to enforce them is weak (see Squire and Suthiwart-Narueput, 1997). The small number of placements made by the central government offices in charge of hiring indicates that most of the recruitment was actually handled by the private sector. In the same vein, it is worth noting that most of the time and effort of labor inspectors is devoted to solving individual labor conflicts.

Consequently, very few plants are visited to check that they do comply with labor standards. In the unlikely event of one such visit, some employers add, inspectors can be easily bribed to avoid paying a fine.

Not surprisingly, employers do not feel unduly unconstrained by current labor regulations. A survey of some 200 manufacturing firms conducted in Cameroon in 1994 reports that only 2 percent of the interviewees considered labor regulations were a large or severe problem, compared to 85 percent who considered the problem was slight or non-existent. The responses were 3 and 75 percent respectively for wage costs, 4 and 85 percent for rules regarding layoffs, and 5 and 63 percent for the cost of layoffs. Differences in these responses across plant sizes and sectors of activity are relatively minor, except for the cost of layoffs. More generally, labor issues appear as the less acute problem faced by firms, after taxes, corruption, price controls, government rules and difficulties in obtaining licenses, in order of decreasing importance (Gauthier, 1995).

This sanguine assessment of the labor market policies in force could be due to the fact that reforms were deeper in Cameroon than elsewhere in the CFA region. However, a similar picture emerges from studies done for other countries. In Senegal, before any deregulation of the labor market had actually taken place, most managers viewed labor market regulations more as a nuisance than a constraint (Terrell and Svejnar, 1989). In Côte d'Ivoire, the most stringent labor regulations were reportedly by-passed by firms using alternatives such as sub-contracting and apprenticeship (World Bank, 1993).

The fact that labor market regulations are not among the main concerns of employers does not imply that these regulations are irrelevant though. The Cameroon survey asks managers whether they would hire more workers if selected labor market regulations were removed. Some 6.5 percent of the interviewees declared they would if minimum wages were abolished, while 93.5 say they would not. In the case of firing restrictions, the answers were 5.5 and 75.5 respectively (Gauthier, 1995). The potential

employment impact of further deregulation is thus not negligible, although it appears to be modest compared to other, non-CFA African countries (particularly, Kenya and Zimbabwe). Unfortunately, these surveys only allow to identify the microeconomic distortions created by labor market policies. They do not allow to assess whether these policies are a source of wage misalignment.

3. The Extent of Wage Misalignment

a) Compared to wages in other countries

One way to assess the extent of wage misalignment is to compare average wages in the CFA zone to those in other countries with a similar development level. Controlling for the development level is key in this respect. Indeed, wages can be expected to be high, relative to the average productivity of labor, in poor countries. The salaried relationship is characteristic of the formal sector of the economy, and this sector is small in poor countries. Labor productivity and earnings tend to be much lower in agriculture, and for the urban self-employed. As a result, wage earners appear as genuinely privileged compared to the average worker. The issue is whether wage earners in CFA countries are more privileged than those in other developing countries.

This issue can be addressed by regressing the ratio of wages to labor productivity on an indicator of the development level, and then analyzing whether CFA countries exhibit some systematic deviation with respect to the estimated regression line. This is done in Table 2, using data from a cross-country data base of labor market indicators currently under construction at the Research Department of the World Bank. This data base includes information on annual wages in current dollars for more than one hundred countries, including six from the CFA zone. Most of the figures are from plant-level surveys collected by UNIDO. The data are from period 1985-93, but in many countries there are only a few observations over this period.

For the regression analysis wages are divided by contemporary output per capita in current dollars, the latter variable being an indicator of the average productivity of labor.

Two key explanatory variables in this regression are output per capita measured in dollars of comparable purchasing power (PPP) and its square. The quadratic term allows for a non-linear relationship between the explained variable and economic development. Other potentially relevant explanatory variables are the share of urban population and the mean years of schooling of the adult population. Although these two variables are correlated with the level of development, they have proven significant when explaining wage variation across countries (see Freeman, 1994). Based on the "new" growth literature, the possibility that regional factors also play a role is considered in the case of Latin American and to Sub-Saharan African countries (see Barro, 1991).

Table 2

Average Wages Across Countries

| Explanatory variables | Dependent variable: Average wage in 1985-93, in percent of per capita GDP | | | |
|--|--|-----------------------|-----------------------|----------------------|
| | (A) | (B) | (C) | (D) |
| CFA countries (dummy variable) | 606.7 ** (8.026) | 578.7 ** (7.375) | 586.8 ** (7.247) | 565.9 ** (6.757) |
| Per capita GDP in 1993, in thousand PPP dollars | -54.53 ** (-4.477) | -50.34 ** (-3.078) | -49.70 ** (-3.692) | -43.48 * (-2.546) |
| Per capita GDP squared, in million PPP dollars | 2.096 ** (3.295) | 2.086 ** (2.859) | 1.985 ** (2.924) | 1.917 * (2.551) |
| Urban population, in percent of the total | | 0.403 (0.348) | | 0.145 (0.119) |
| Mean years of schooling for ages 25 and above | | -12.72 (-1.365) | | -13.06 (-1.334) |
| Countries in Latin America and the Caribbean (dummy variable) | | | 56.82 (1.260) | 62.96 (1.295) |
| Sub-Saharan African countries (dummy variable) | | | 63.41 (1.141) | 55.79 (0.934) |
| Independent term | 435.0 ** (11.262) | 458.2 ** (9.413) | 385.3 ** (7.180) | 416.7 ** (6.267) |
| Number of observations | 108 | 106 | 108 | 106 |
| Adjusted R ² | 0.566 | 0.568 | 0.566 | 0.568 |
| F test | 47.46 | 28.58 | 28.91 | 20.70 |

Note: Values in parentheses are "t" statistics. Significant coefficients at the 5 and 1 percent level are indicated by one and two asterisks respectively.

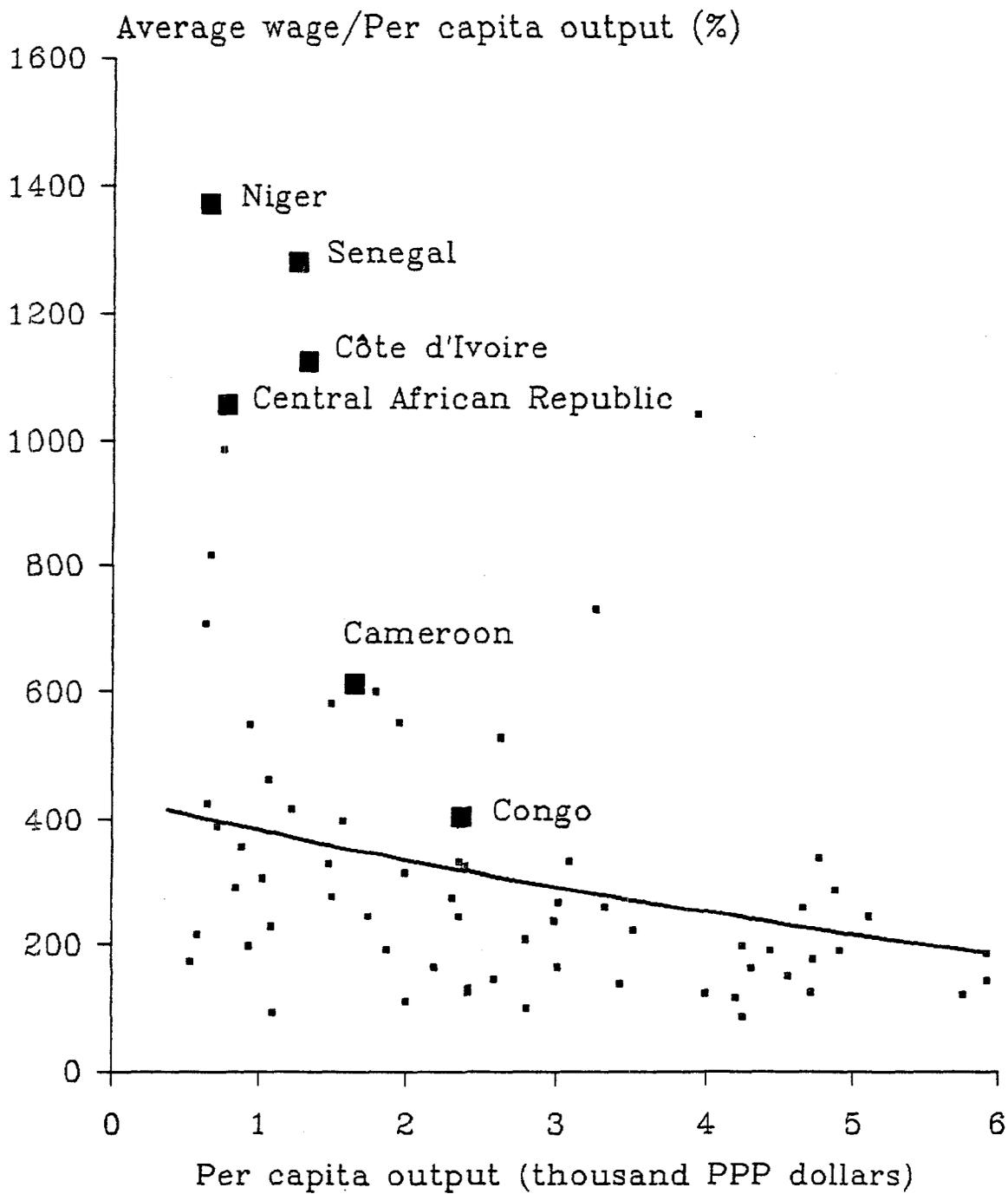
The econometric results reported in Table 2 show a convex relationship between the ratio of wages to labor productivity on the one hand and the level of development on the other hand. This relationship is downward-sloping at low levels of development. It reaches a minimum for industrial countries, where predicted wages are comparable to per capita output. At the level of development of CFA countries, wages are equal to about six times per capita output. Also, the ratio of wages to labor productivity appears to be larger, other things equal, in countries with a higher urban population share and a lower level of schooling. But the corresponding coefficients are not statistically significant. Similarly, wages appear to be higher in Latin American and Sub-Saharan African countries than in other areas, but the associated coefficients are not significant either.

From the point of view of this study, the most striking result in Table 2 concerns the dummy variable for countries in the CFA region. Whatever the specification chosen for the regression, the coefficient multiplying this dummy variable is positive and statistically significant. Its order of magnitude remains unaffected, at around 600 percent, regardless of the set of control variables included in the regression. Given that the predicted level of the ratio of wages to labor productivity for these countries is also in the order of 600 percent, the results in Table 2 imply that wages in CFA countries are about twice as high as in other countries with a similar level of development. This finding, illustrated in Figure 1, can be considered as clear evidence of wage misalignment.

b) Compared to non-wage labor earnings

A different way to assess whether wages are particularly high in CFA countries is to compare them to non-wage labor earnings. This kind of comparison requires information on individual earnings, as well as on individual characteristics such as education, work experience and other measures of human capital.

Figure 1
Average Wages and Economic Development



These control variables are needed to make sure that comparisons are made across similar workers. The standard practice in this respect is to estimate Mincerian equations, where the explained variable is the log of labor earnings and the explanatory variables are individual characteristics like those listed above. The analysis is completed by splitting the sample between the individuals who do work in the formal sector, and are therefore covered by labor market policies and institutions, and those who do not.²

The criteria used to identify the formal sector vary across studies. In some cases, the sample is split according to the size of the establishments these individuals work in. But more elaborate criteria are applied too. Consider, for instance, the study on Côte d'Ivoire by Vijverberg and van der Gaag (1990). This study applies factor analysis, involving 15 job attributes, to data from the 1985 Living Standards Survey (CILSS). The first component of these data is then used as an indicator of the formality of jobs. This component turns out to be highly correlated with six of the job attributes. It is higher when the wage is subject to minimum wage legislation, when there is a signed contract, when the worker receives paid holidays, when he or she is eligible for paid sick leave, when there is a retirement plan, and when the worker receives social security benefits.

A different approach is adopted by Miller and Vallée (1995) in the case of Cameroon. Using a plant-level based survey of workers produced by the Regional Program on Enterprise Development (RPED), these authors consider three sectors: formal regulated, formal unregulated and informal. Firms in the formal regulated sector are characterized by multiple ownership, or by some form of public ownership, or by having complained about being constrained by labor regulations. At the other end, firms in the informal sector are characterized by individual ownership, and by either having apprentices or carrying no

² Some of the studies also correct for the self-selection of workers into the different sectors. They take advantage of the fact that workers in the formal and informal sectors have different observable characteristics to make inferences about other, unobservable characteristics that may affect their earnings. Ignoring these other, unobservable characteristics could bias the coefficients associated to the observable ones.

formal accounts. All other firms are classified as being formal but unregulated. This criterion is thus different from the one used by Vijverberg and van der Gaag. But the divide between formal and informal would likely be similar if both were applied to the same sample.

Results from a series of studies done along these lines for selected CFA countries are summarized in Table 3. Although the list of studies is almost certainly incomplete, it probably covers a significant portion of the literature on this issue. It could be objected that some of the samples are too small to make any reliable inference. The paucity of empirical analysis in this particular region of the world, however, makes the results from these studies interesting on their own. Table 3 reports the impact of formality on labor earnings, based on the coefficient multiplying the formal sector dummy variable in the corresponding Mincerian equation. The figures in the Table indicate the percent change in earnings an individual with "average" characteristics would experience if he or she shifted from an informal to a formal sector job.

The results in Table 3 provide further evidence of wage misalignment in CFA countries. With the possible exception of Mali, the gap between formal and informal sector earnings is high by any standards. Of course, the gap can be expected to be positive even in countries with relatively flexible labor markets. Formal sector firms may voluntarily pay higher wages as a way to attract better workers, to reduce the turnover rate, to boost morale or to elicit higher effort levels. Informal sector firms, by contrast, are less likely to use "efficiency" wages of this sort. However, the gap between formal and informal sector earnings seldom exceeds 30 percent, even in countries where the distortions created by labor market policies are agreed to be large (see for instance MacIsaac and Rama, 1997, on Ecuador). In CFA countries, by contrast, earnings gaps of 60 percent or more are not uncommon.

Table 3

Wage Premium for Formal Sector Jobs

| Study | Estimation technique | Burkina Faso | Cameroon | Côte d'Ivoire | Mali |
|--|---|------------------------------------|------------------------------------|------------------------------------|--------------------------------|
| Berthélémy and Bourguignon (1992; Table 4.4, page 98) | OLS with dummy variable for formal sector jobs | | | 203.7 % [CILSS, 1985; N = 311] | |
| Lachaud (1993b; Table D, page 54) | OLS with dummies for covered and uncovered wage jobs | 57.1 % [IIES, 1990-91; N = 219] | 60.3 % [IIES, 1990-91; N = 278] | 40.9 % [IIES, 1986-87; N = 244] | 9.6 % [IIES, 1991; N = 202] |
| Miller and Vallée (1995; Table 6.11, page 176) | OLS with sample split between formal and informal firms | | 70.2 % [RPED, 1994; N = 517] | | |

(Continued)

Table 3 (Contd.)

Wage Premium for Formal Sector Jobs

| Study | Estimation technique | Burkina Faso | Cameroon | Côte d'Ivoire | Mali |
|--|---|--------------|-------------------------------------|--------------------------------------|------|
| Vallée and Thomas (1994; Table 5.12, page 170) | OLS with sample split between regulated and non-regulated firms | | 34.3 % [RPED, 1993; N = 740] | | |
| Vijverberg and Van der Gaag (1993b; Table 6.2, page 34) | OLS with factor analysis for job coverage | | | 65.2 % [CILSS, 1985; N = 295] | |

Note: All studies control for individual characteristics, but the set of controls varies across studies. The wage premium is based on the coefficient (c) multiplying the formal sector dummy variable. In the case of Lachaud (1993b), it is based on the difference between coefficients for covered and uncovered wage jobs. In the case Vijverberg and Van der Gaag (1990), the formal sector dummy is the first of the principal components of a set of job characteristics. For large values of the c coefficients, in absolute terms, the percent premia is approximated as $100[\exp(c)-1]$. Data sources and sample sizes are reported in brackets. CILSS is the Cote d'Ivoire Living Standards Survey, a household survey with national coverage. IIES is a series of labor force surveys carried out by the Institut International d'Etudes Sociales in the capital cities. RPED is the Regional Program for Enterprise Development, a plant-level survey which includes data on up to ten workers in each firm.

These econometric results are consistent with anecdotal evidence that formal sector jobs carry "rents" attached to them, and that these rents underlie some commonly observed private deals. According to several sources, when central placement offices still existed, job seekers used to bribe their staff in order to get access to the vacancies in the system. Now that centralized hiring has been abolished, trade union representatives claim the bribes go to the foremen who are in charge of recruitment at the floor level. Paying bribes of this sort would make no sense if the labor market was competitive. The fact that someone else than the workers themselves (e.g. the foremen) may appropriate part of the rents does not alter the conclusion that these rents do exist.

4. The Nature of Wage Rigidity

a) Real rigidity

Limited knowledge on how private sector wages are determined explains the uncertainty about the potential effects of the 1994 devaluation of the CFA Franc. Numerical exercises based on computable general equilibrium models tended to conclude that the short-run effects of the devaluation on output were positive for any plausible values of the key elasticities of demand and supply for goods and services, as well as for any plausible assumptions on public expenditures. The degree of wage indexation, by contrast, turned out to be crucial, and could lead to negative long-run effects (Bourguignon *et al.*, 1995). A better understanding of how private sector wages are linked to other nominal variables in the economy, including consumer prices, minimum wages and government wages, is therefore needed.

The link between wages and prices is evaluated in this section using industry-level data for Côte d'Ivoire and Senegal over a period of two decades. Data are from the records of formal sector firms kept by the governments of these two countries. These records, known as the *Banques de Données Financières*, or

BDFs for short, include information on the total wage bill and employment, organized according to various break-downs. Although all firms in the two countries should in principle submit this information to the corresponding BDFs, in practice only formal sector firms do so, and not for all years. The result is an unbalanced panel of some two thousand firms in Côte d'Ivoire, and of roughly one thousand firms in Senegal. This section focuses on the determinants of average labor costs by industry in these panels. There are 53 such industries in the BDF of Côte d'Ivoire, and 35 in that of Senegal.

A simple specification is used to assess the link wages and other nominal variables. The chosen dependent variable is the annual change in the average labor cost by sector, while the explanatory variables are the annual inflation rate, the annual change in economic activity and the annual change in the terms-of-trade level. The explanatory variables are defined at the economy-wide level; the latter two are lagged one year.³ To better identify the sources of wage rigidity, the inflation rate is measured in three different ways. In addition to the change in aggregate consumer prices, the change in the minimum wage (SMIG) and the variation in the average government wage are also included among the explanatory variables.

The results, reported in Tables 4 and 5, show that average labor costs follow closely the fluctuations of average government wages and also, to some extent, those of consumer prices. They do not appear to be affected, however, by changes in the minimum wage. The coefficient on the latter variable is not statistically significant in any of the regressions for Côte d'Ivoire. In the case of Senegal, it is significant only when the change in the average government wage is omitted from the regression, which means that the

³ These variables can be considered exogenous, because each of the sectors is too small to affect macroeconomic aggregates on its own.

Table 4
Determinants of Wage Increases in Côte d'Ivoire

| Explanatory variables | Dependent variable: Change in the log of average labor costs per worker in formal sector firms | | | | | | |
|---|---|----------------------|----------------------|----------------------|-----------------------|----------------------|-----------------------|
| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
| Change in the log of consumer prices | 0.7235 ** (5.338) | | | 0.7221 ** (5.321) | - 0.0921 (- 0.393) | | - 0.0862 (- 0.367) |
| Change in the log of minimum wages | | -0.0623 (-0.480) | | -0.0378 (-0.296) | | 0.2713 (0.654) | 0.2653 (0.6392) |
| Change in the log of average government wages | | | 0.4748 ** (4.397) | | 0.5166 ** (3.405) | 0.4737 ** (4.385) | 0.5128 ** (3.376) |
| Change in the log of terms of trade (lagged) | 0.0388 (0.760) | -0.0207 (-0.392) | 0.0178 (0.207) | 0.0346 (0.653) | 0.0209 (0.243) | 0.0481 (0.494) | 0.0504 (0.516) |
| Change in the log of real output (lagged) | 0.0718 (0.381) | 0.6618 ** (3.334) | -0.2826 (-0.816) | 0.1064 (0.480) | -0.3075 (-0.873) | -0.4325 (-1.041) | -0.4525 (-1.079) |
| Independent term | 0.0143 (1.149) | 0.0674 ** (7.903) | 0.0485 ** (5.844) | 0.0100 (0.842) | 0.0511 ** (3.306) | 0.0441 ** (4.768) | 0.0488 ** (3.074) |
| Adjusted R ² | 0.045 | 0.017 | 0.025 | 0.044 | 0.024 | 0.024 | 0.023 |
| F test | 16.12 | 6.51 | 7.15 | 12.10 | 5.39 | 5.46 | 4.39 |
| Number of observations | 969 | 969 | 724 | 969 | 724 | 724 | 724 |

Note: Data on average labor costs per worker are from the *Banque de Données Financières*, which is composed of about two thousand medium and large firms. There is one observation per industry per year, over period 1976-1994. Values in parentheses are "t" statistics. Significant coefficients at the 5 and 1 percent level are indicated by one and two asterisks respectively.

Table 5
Determinants of Wage Increases in Senegal

| Explanatory variables | Dependent variable: Change in the log of average labor costs per worker in formal sector firms | | | | | | |
|---|---|----------------------|----------------------|----------------------|----------------------|----------------------|------------------------|
| | (A) | (B) | (C) | (D) | (E) | (F) | (G) |
| Change in the log of consumer prices | 0.9149 ** (4.070) | | | 0.6586 ** (2.313) | 0.6007 ** (2.234) | | 0.5760 ** (2.087) |
| Change in the log of minimum wages | | 0.5938 ** (3.647) | | 0.3014 (1.465) | | 0.6541 (0.886) | 0.1497 (0.404) |
| Change in the log of average government wages | | | 0.7219 ** (3.288) | | 0.6149 ** (2.746) | 0.4737 ** (4.385) | 0.5877 ** (2.512) |
| Change in the terms of trade (lagged) | 0.8658 ** (2.540) | 0.3077 (0.8025) | 0.8483 ** (2.077) | 0.5640 (1.417) | 1.0715 ** (2.558) | 0.8264 ** (2.019) | 1.0522 ** (2.493) |
| Change in output at constant prices (lagged) | 1.3480 ** (2.437) | 0.2334 (0.380) | 0.0690 (0.106) | 0.8140 (1.230) | 0.6825 (0.969) | -0.0152 (-0.023) | 0.6180 (0.855) |
| Independent term | -0.0186 (-0.629) | 0.0390 (1.591) | 0.0217 (0.806) | -0.0048 (-0.156) | 0.0511 ** (3.306) | 0.0142 (0.502) | -0.0250 ** (-0.740) |
| Adjusted R ² | 0.030 | 0.026 | 0.019 | 0.032 | 0.027 | 0.019 | 0.025 |
| F test | 8.17 | 7.07 | 4.42 | 6.68 | 4.59 | 3.51 | 3.70 |
| Number of observations | 686 | 686 | 518 | 686 | 518 | 518 | 518 |

Note: Data on average labor costs per worker are from the *Banque de Données Economiques et Financières*, which is composed of about one thousand medium and large firms. There is one observation per industry per year, over period 1975-1994. Values in parentheses are "t" statistics. Significant coefficients at the 5 and 1 percent level are indicated by one and two asterisks respectively.

result is not robust. The evidence concerning the link statistically insignificant when the change in government wages is considered as an explanatory variable.⁴

The prominent role played by average government wages may be due to the presence of several state-owned enterprises in the BDF samples. Wage decisions in these firms could indeed be responsive to government pay policies. To assess the extent to which the labor costs of private sector firms are affected by government wages it would be necessary to have information on state ownership by sectors. Unfortunately, information of this sort is not available at this stage. The conclusion that changes in the SMIG do not have a significant impact on labor costs, on the other hand, should not be affected by the inclusion of data on state ownership by sectors.⁵

The results in Tables 4 and 5 also suggest that labor costs in large firms are only weakly responsive to real shocks, as captured by the economy-wide fluctuations in output and the terms of trade. The coefficients associated to these two variables are not statistically significant in the case of Côte d'Ivoire. And only the changes in the terms-of-trade level appear to be relevant in the case of Senegal (the coefficient multiplying the change in economic activity is not robust to changes in the set of control variables). Real shocks could still affect average labor costs through the SMIG, because the latter is endogenous, as will be shown below. But the SMIG was found to have little or no influence on pay decisions by large firms. Real rigidity thus appears to be an important feature of average labor costs in the formal sector of the economy.

⁴ Microeconomic evidence on how labor costs reacted to the 1994 devaluation of the CFA Franc is ambiguous in this respect too. Using plant-level data for Cameroon, Barba Navaretti *et al.* (1996) show that the median wage fell by 11 percent compared to output prices between 1992-93 and 1994-95. But on the other hand the average wage increased by about 13 percent.

⁵ Given the insignificance of changes in the SMIG over the whole sample, these changes could be positively correlated with changes in the labor costs of private firms only if they were at the same time negatively correlated with changes in the labor costs of state-owned enterprises, which is unlikely.

This conclusion does not apply to labor earnings in the informal sector though. If data from a representative household survey are used, instead of data from a sample of formal sector firms, a negative association between labor earnings and local unemployment rates can be found. This was shown by Hoddinott (1996) using urban data from the 1985, 1986 and 1987 rounds of the CILSS. Their results also indicate that the negative influence of unemployment on labor earnings is stronger in the case of young workers, and weaker in the case of public sector employees. Overall, and after controlling for a number of potentially serious econometric problems, most notably unobserved location-specific effects, Hoddinott estimates the wage-unemployment elasticity of Côte d'Ivoire at -0.13. This is similar to the -0.1 elasticity reported by Blanchflower and Oswald (1994) for the US, Britain and other industrial countries.

b) Nominal rigidity

The case to devalue the CFA Franc rested in part on the premise that formal sector wages were rigid downwards. The conventional wisdom is that the adverse shocks of the late 1970s led to a drop of aggregate demand, hence creating a substantial deflationary pressure. While the labor earnings of those who were not protected by the regulations in force declined, the story goes, workers in the formal sector succeeded in preventing their wages to be cut. Labor costs in formal sector firms thus failed to match the decline in aggregate demand, and this misalignment was at the roots of a deep recession. While this interpretation of the economic developments of the 1980s and early 1990s is plausible, there is little empirical evidence to support it.

If the conventional wisdom was right, over the 1980s and early 1990s there should have been a decline of labor earnings in the informal sector and a relative stability of wages in the formal sector. Moreover, if the downward rigidity resulted, as it is claimed, from labor market policies and institutions, trends in formal sector wages should have reproduced those of the SMIG. This is because the SMIG not

only represents the wage of those who make the bare legal minimum: it also provides the "floor" for the salary grids negotiated between trade unions and employers. However, none of these two predictions holds true in the cases of Côte d'Ivoire and Senegal, which are the two biggest economies in the region and also, arguably, the ones with the most distorted labor markets.

The conventional wisdom is rejected based on data from the consumer price indexes of Côte d'Ivoire and Senegal. While the BDFs of these two countries provide information on average labor costs in their formal sectors, there is indeed no similar, readily-available source for labor earnings in the informal sector. But the consumption bundles used to calculate consumer price indexes include a few personal services whose production involves little more than labor. To the extent that these services are provided by individuals or micro-enterprises, they are not likely to be directly affected by labor market regulations. Fluctuations in their prices can therefore be expected to follow closely those of labor earnings in the informal sector.

To minimize the possibility of a measurement bias, the focus of the empirical analysis is on services whose prices are defined based on output units, rather than on the corresponding labor inputs. When labor units are used, there is a risk that the statistical offices report the SMIG or some specific minimum wage set in collective agreements, rather than the actual labor cost, as the relevant information source. This is what happens in practice with the prices of domestic service and cooking in the consumer price index of Côte d'Ivoire. Moreover, even if the statistical offices did gather the data from the actual providers of these services, the latter could declare fake wages to hide non-compliance with labor regulations. But there should be no such biases when the unit of measurement is the price of a hair-cut, or the cost of a laundry for a double-bed sheet. To the extent that no legal minimum price exists for these services, there are no incentives to report fake prices either. These prices are taken from the European consumer price index, which goes farther back in time than the African one.

The resulting indexes for labor earnings in the informal sectors of Côte d'Ivoire and Senegal show there was no deflationary trend over the 1980s and early 1990s. These indexes are represented in Figures 2 and 3 respectively.⁶ In Côte d'Ivoire, labor earnings in the informal sector increased roughly at the same pace as labor costs in the formal sector, at least until the end of the 1980s. In Senegal, they increased at a much faster pace. Figures 2 and 3 also show that both labor earnings in the informal sector and labor costs in the formal sector increased far more than the SMIG.

The plots in Figures 2 and 3 do not imply that formal sector wages are flexible downwards though. They only suggest that downward rigidity, if it does exist, did not play a role in the series of events leading to the 1994 devaluation of the CFA Franc. In particular, they reject the hypothesis that labor market policies and institutions were the obstacle preventing wages in the formal sector to adjust to a more unfavorable international context. But the downward rigidity of wages, if there is such a thing in CFA countries, could still represent a serious problem when facing truly deflationary pressures. The fact that these pressures did not materialize in the 1980s and early 1990s does not rule them out for the future.

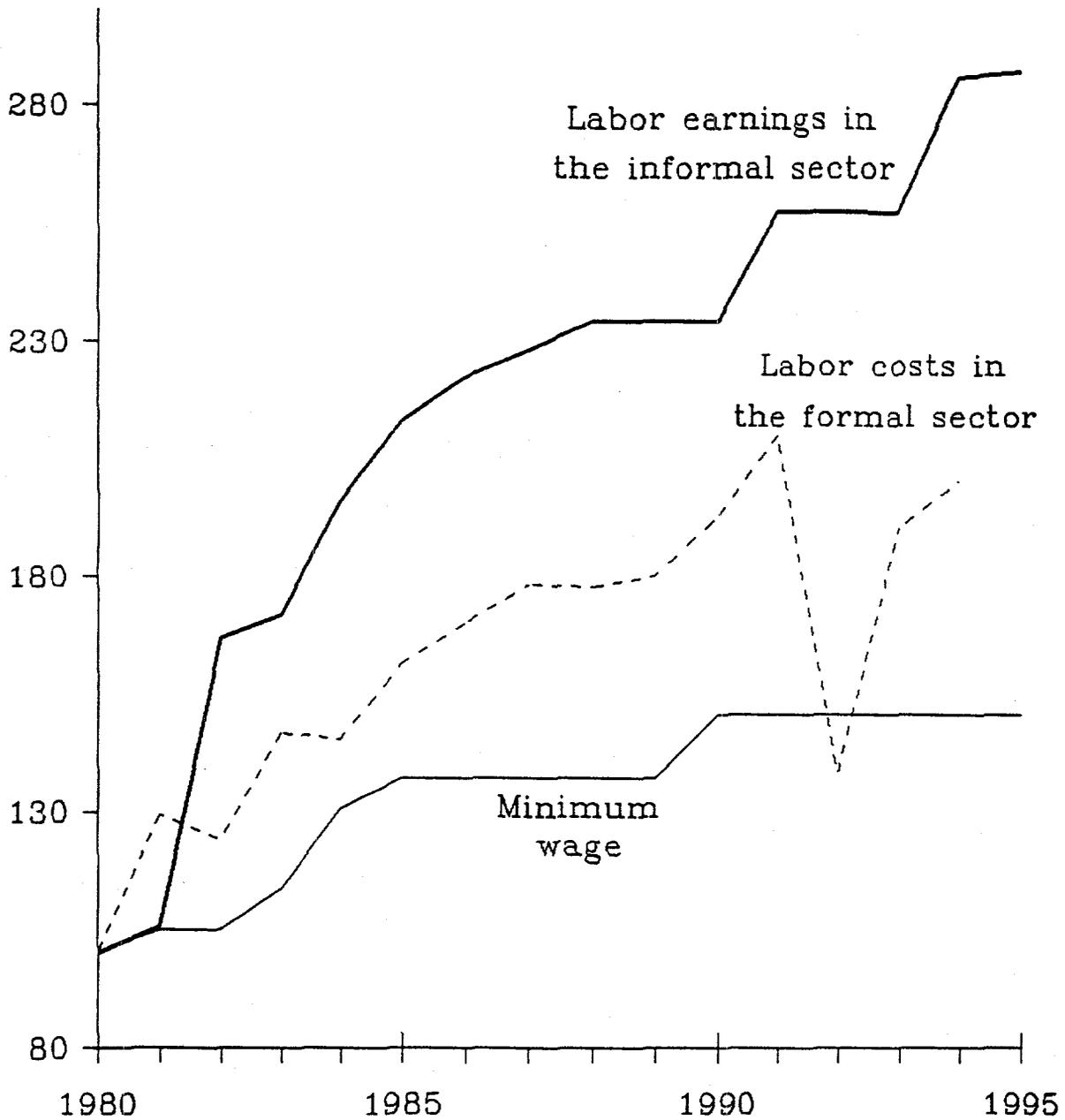
There is, however, some evidence that formal sector wages are flexible downwards, at least in Côte d'Ivoire. The reason why this flexibility may not be apparent is because analyses based on averages tend to neglect composition effects. In a study using data collected at the plant level, Levy and Newman

⁶ The represented series are unweighted averages of the indexes for hair-cuts and laundries. Each of these two, in turn, is an unweighted average of the indexes for all of the items available in the European consumption bundle of the two countries. In Cote d'Ivoire, the price index for hair cuts is based on items 41011 and 41012, whereas the price index for laundries is based on items 31018, 31019 and 31020. In Senegal, items 118 and 119 were used for hair-cuts, and item 148 for laundries.

Figure 2
Nominal Labor Earnings in Côte d'Ivoire
(Base 1980=100.0)



Figure 3
Nominal Labor Earnings in Senegal
(Base 1980=100.0)



(1989) showed that average wages in the formal sector increased between 1979 and 1984, but wages for well-specified classes of labor actually decreased. This discrepancy was due to the change in the composition of the labor force, which was characterized by greater education, training and experience in 1984 than in 1979. A similar discrepancy could perhaps be found for the series depicted in Figures 2 and 3, if these series could be disaggregated by classes of labor, which unfortunately is not possible.

5. The Level of Minimum Wages

a) Compared to minimum wages in other countries

Having established that wage misalignment was substantial in CFA countries over the late 1980s and early 1990s, the issue is whether labor market policies and institutions played a role in explaining this outcome. Put differently, it is necessary to understand why private sector firms paid their workers so much in excess of their alternative earnings. The most obvious suspect in this respect is, of course, the minimum wage policy characterizing CFA countries. While the previous section found no evidence of indexation to the SMIG, the latter could be still preventing wages from adjusting downwards. This is because the SMIG not only affects the earnings of those who make the bare legal minimum, but also the "floor" of the salary grids negotiated between trade unions and employers, hence earnings in all sectors with collective bargaining.

From an international perspective, however, the minimum wages of CFA countries are not high enough to account for the observed misalignment of their average wages. Table 6 replicates the international comparison carried out in section 3, with the explained variable being now the ratio of

minimum wages (rather than average wages) to output per capita. The sample of countries is somewhat smaller than in section 3, because there are fewer data on minimum wages in the data base being assembled at the Research Department of the World Bank. Most of these data were originally collected by US embassies for the US Department of Labor, and refer mainly to the years 1985-88.⁷ The sample includes now seven countries from the CFA zone.

As in the case of average wages, minimum wages tend to represent a higher multiple of per capita output in poorer countries. More generally, the coefficients multiplying most of the variables considered in Table 6 have the same sign as those estimated in Table 2 for average wages, but they tend to be statistically insignificant.

The most interesting feature of Table 6 is, of course, the positive and statistically significant coefficient associated with the dummy variable for CFA countries. As before, this coefficient does not vary much with the set of explanatory variables included in the regression. Although the coefficients in columns (C) and (D) seem to be 50 percentage points higher than those in columns (A) and (B), this is due to the inclusion of a Sub-Saharan African dummy in the specification. The coefficient on this variable is significantly negative, at around -50 percentage points. Since CFA countries do also belong to the Sub-Saharan African region, the net gap with other developing countries is still around 100 percentage points, which is roughly the same as in columns (A) and (B).

⁷ A few countries (e.g. the UK) do not have a minimum wage policy. The minimum wage is set equal to zero in their case. Strictly speaking, therefore, the dependent variable in Table 6 is censored. However, the number of countries with no minimum wage policy is small enough to justify the use of ordinary least squares in the estimation.

Table 6
Minimum Wages Across Countries

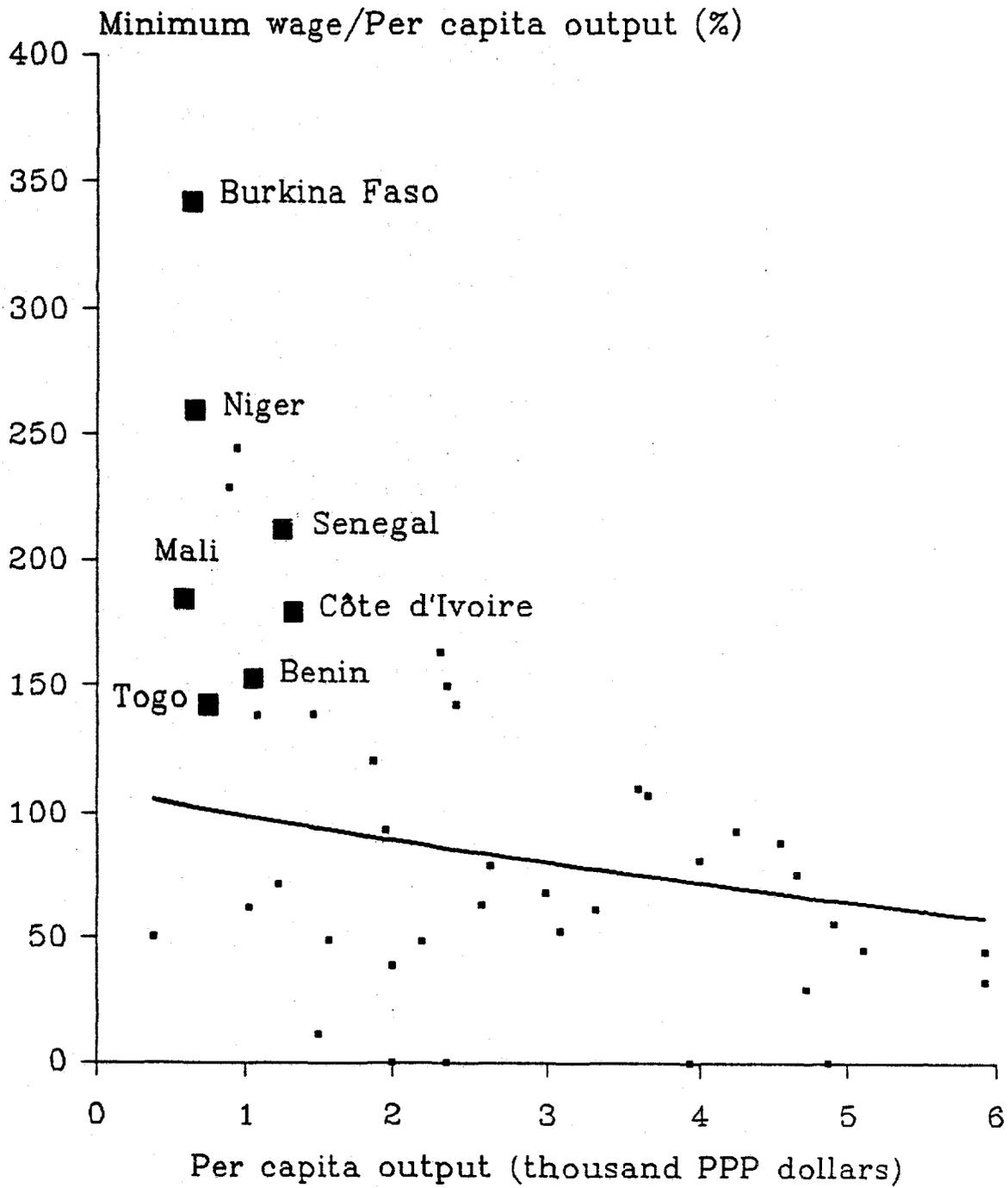
| Explanatory variables | Dependent variable: Minimum wage in 1985-93, in percent of per capita GDP | | | |
|--|--|---------------------|-----------------------|---------------------|
| | (A) | (B) | (C) | (D) |
| CFA countries (dummy variable) | 109.9 ** (4.950) | 106.2 ** (4.493) | 153.6 ** (5.037) | 146.9 ** (4.802) |
| Per capita GDP in 1993, in thousand PPP dollars | -10.66 * (-2.304) | -4.337 (-0.738) | -13.29 ** (-2.821) | -6.370 (-1.056) |
| Per capita GDP squared, in million PPP dollars | 0.337 (1.471) | 0.111 (0.434) | 0.429 (1.865) | 0.216 (0.840) |
| Urban population, in percent of the total | | -0.769 (-1.884) | | -0.717 (-1.742) |
| Mean years of schooling for ages 25 and above | | 0.250 (0.068) | | -1.288 (-0.344) |
| Countries in Latin America and the Caribbean (dummy variable) | | | -7.443 (-0.481) | 0.461 (0.029) |
| Countries in Sub-Saharan Africa (dummy) | | | -58.64 * (-2.100) | -54.30 (-1.937) |
| Independent term | 109.1 ** (7.126) | 128.3 ** (6.406) | 126.3 ** (6.629) | 143.3 ** (6.537) |
| Number of observations | 71 | 71 | 71 | 71 |
| Adjusted R ² | 0.519 | 0.530 | 0.536 | 0.546 |
| F test | 26.15 | 16.80 | 17.16 | 13.07 |

Note: Values in parentheses are "t" statistics. Significant coefficients at the 5 and 1 percent level are indicated by one and two asterisks respectively.

According to the regressions in Table 6, countries with the development level of the CFA region are expected to have minimum wages about twice as high as their per capita output. Observed minimum wages in these countries are therefore some 50 percent higher than predicted by the regressions, as illustrated in Figure 4. While such a discrepancy is far from being negligible, it is clearly insufficient to account for the observed wage misalignment. Studies done for other countries suggest that the elasticity of average wages to minimum wages is relatively low. For instance, in Indonesia this elasticity was estimated at 0.1, in spite of substantial government efforts to enforce minimum wages (see Rama, 1996). The results obtained when evaluating wage indexation suggest that the elasticity may in fact be nil in CFA countries. But even if the 0.1 benchmark was used, a 50 percent misalignment of minimum wages would translate into a 5 percent misalignment of average wages, a far cry from the 100 percent discrepancy observed in practice.

It can be argued that minimum wages which are 50 percent higher than predicted would not only raises average wages, but also depresses economic activity. Since per capita output is used as a deflator to compare wages across countries, the impact of minimum wages would be under-estimated. However, the magnitude of this bias is likely to be small. The elasticity of labor demand with respect to average wages is generally estimated at less than one (in absolute value). The elasticity of output with respect to employment, in turn, can be approximated by the income share of labor, which by definition is also lower than one. Therefore, a 5 percent increase in average wages should lead to a decline of per capita output of less than 5 percent (in absolute value). Which implies that the misalignment of minimum wages in CFA countries can hardly account for more than a 10 percent misalignment of their average wages.

Figure 4
 Minimum Wages and Economic Development



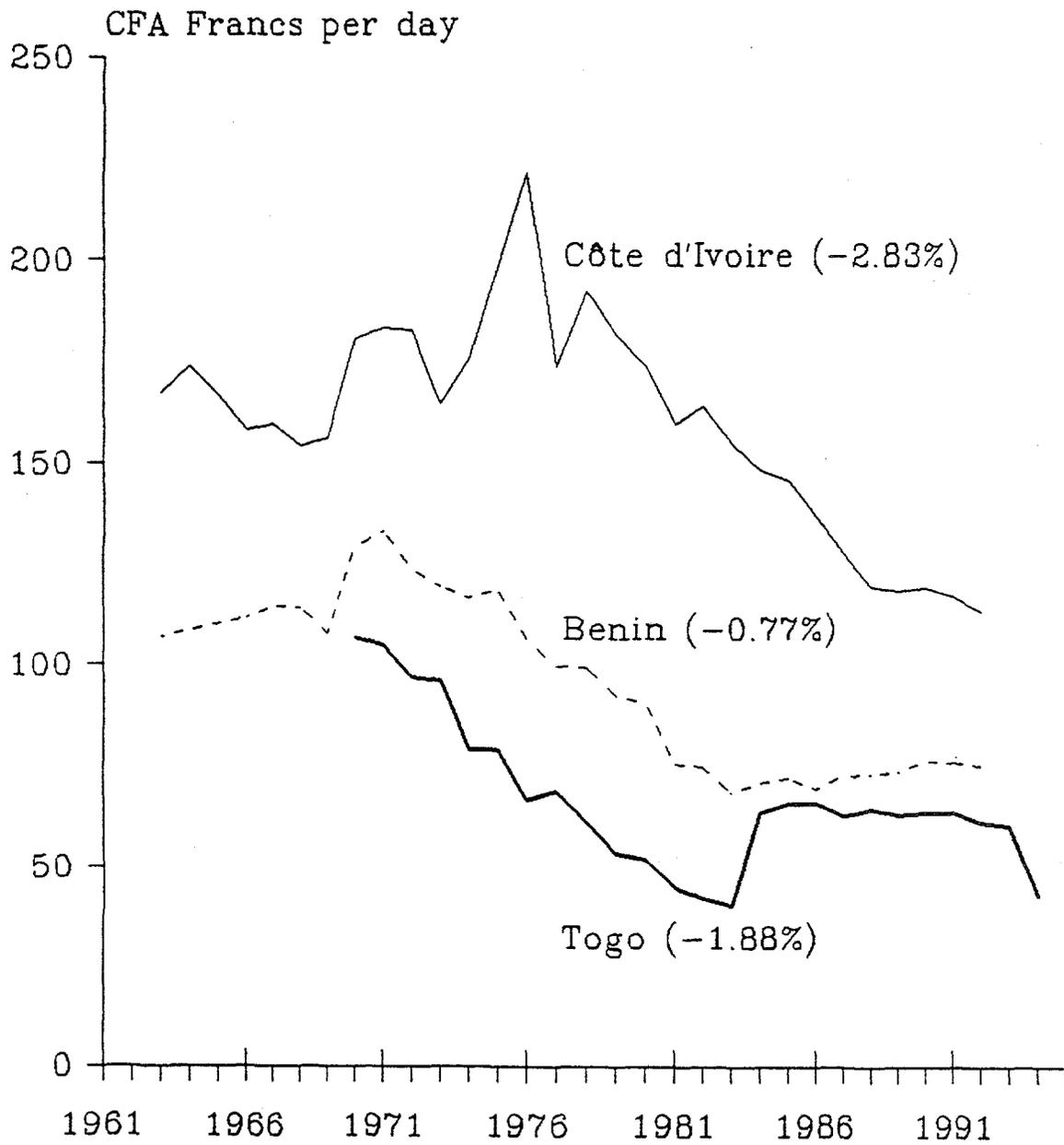
b) In real terms over time

The comparison of minimum wages across countries refers to period 1985-93, but most of the minimum wage data actually correspond to the years 1985-88. The issue is whether a similar analysis using more recent data would have yielded the same conclusions. After all, per capita output measured in real terms declined substantially in most CFA countries during the 1980s and early 1990s. In Côte d'Ivoire, it decreased at an annual rate of 4.6 percent, and in Niger it did it at an annual rate of 4.1 percent. Although in a less dramatic way, per capita output also decreased in Cameroon (-2.2), Togo (-2.1), Central African Republic (-1.6) and Gabon (-1.6 too).⁸ The current misalignment of minimum wages could therefore be much higher than suggested by the results in Table 6.

Minimum wages declined in real terms during this same period though, as shown in Figures 5 and 6. Their annual rate of variation per country, from the time when the terms-of-trade levels reached their peak until before the devaluation of the CFA Franc, is indicated in parentheses in the Figures. Although the specific dates chosen for the calculation of these rates (1977 and 1992 respectively) are somewhat arbitrary, the results would be similar if a few years were added or subtracted at both ends of the interval. What these rates show is that inflation allowed a substantial decline of real minimum wages in all countries where there are data, with the exception of Niger. In most cases, the minimum wage declined at a faster pace than per capita output. So, by the time the devaluation of the CFA Franc took place the misalignment of minimum wages was probably not larger than indicated by the international comparison in Table 6.

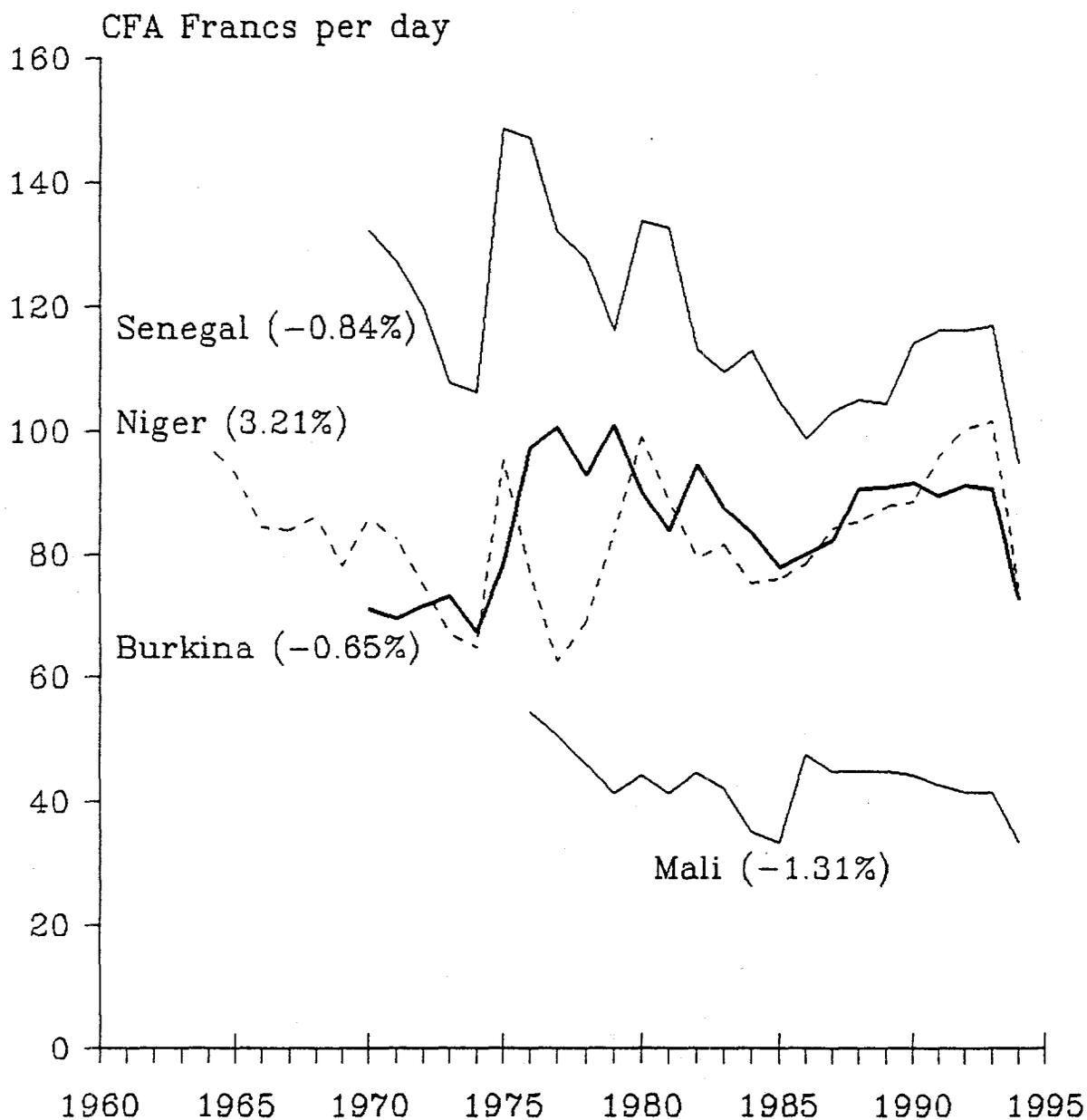
⁸ With the exception of Chad, which experienced a positive growth rate of 3.2 percent per year during this period, all of the other countries in the region had annual growth rates of per capita output in the range of -1.0 to 1.0 percent.

Figure 5
Minimum Wages in Coastal Countries
(at constant 1980 prices)



Annual growth rates over
1977-1992 in parentheses

Figure 6
 Minimum Wages in Sahel Countries
 (at constant 1980 prices)



Annual growth rates over
 1977-1992 in parentheses

c) As a function of macroeconomic conditions

The observed decline of minimum wages in real terms suggests that policy makers in CFA countries were responsive to the overall deterioration in macroeconomic conditions. In general, governments can be expected to be more prone to raise minimum wages in "good" times, and to freeze them in "bad" times. As long as there is some inflation, freezing the minimum wage provides a mechanism to reduce the "floor" of formal sector wages. This possible endogeneity of labor market policies in developing countries has been considered and analyzed at the conceptual level in several opportunities (see Freeman, 1993, and Rama and Tabellini, 1997, among others). Countries in the CFA region provide an opportunity to test it at the empirical level.

The simplest way to implement an empirical test of the endogeneity of minimum wages is to treat their yearly change as a censored variable, partially reflecting the yearly change of a latent variable. The implicit assumption is that the optimal change in the minimum wage, from the viewpoint of policy makers, is some stable function of macroeconomic variables such as the changes in aggregate prices, in the level of economic activity and in the terms of trade. These variables evolve over time, and so does the optimal change in the minimum wage. However, social and political constraints imply the minimum wage cannot be cut in nominal terms. Given these constraints, the actual minimum wage would increase only when its optimal change is positive. When it is negative, in turn, the actual minimum wage would remain frozen in nominal terms, as was the case in CFA countries in most of the years preceding the 1994 devaluation.

This simple model is applied to the annual changes of the SMIG in all of the CFA countries for which data are available. In practice, this amounts to using a sample with slightly less than 200 observations, most of which are zeroes. The latent variable (i.e. the optimal change in the nominal SMIG, from the policy-makers perspective) is assumed to be a function of annual changes in consumer prices, in economic activity and the in terms-of-trade level. All three macroeconomic variables are measured at the country level and included in the regression with a lag of at least one year, to

Table 7

Minimum Wage Endogeneity

| Explanatory variables | Dependent variable: annual change in the log of the minimum wage | | Dependent variable: annual change in minimum wage (1 if raised, 0 otherwise) | |
|--|--|----------------------|--|----------------------|
| | Tobit estimates | | Logit estimates | |
| | (A) | (B) | (C) | (D) |
| Change in the log of terms of trade (lagged two years) | 0.3193 ** (2.042) | 0.3177 ** (2.036) | 2.7294 ** (2.162) | 2.7325 ** (2.116) |
| Change in the log of output at constant prices (lagged one year) | 1.0943 ** (2.480) | 1.0774 ** (2.420) | 7.3127 ** (2.211) | 7.1094 ** (2.116) |
| Change in the log of consumer prices (lagged one year) | 1.1033 ** (3.312) | 1.0924 ** (3.228) | 9.0364 ** (3.520) | 9.0920 ** (3.440) |
| Country-specific dummy variables | No | Yes | No | Yes |
| Independent term | -0.2508 ** (-5.064) | | -1.8457 ** (-6.587) | |
| Number of observations | 187 | 187 | 187 | 187 |
| Pseudo R ² | 0.185 | 0.207 | 0.116 | 0.134 |
| Chi-square test | 24.49 | 27.47 | 24.91 | 28.76 |

Note: All variables are defined at the country level. Values in parentheses are "t" statistics. Significant coefficients at the 5 and 1 percent level are indicated by one and two asterisks respectively.

avoid simultaneity problems. The hypothesis to be tested is that these macroeconomic variables have a positive impact on the latent variable, hence indirectly on the level of the SMIG.

The results obtained when estimating this model, reported in Table 7, indicate that minimum wages were highly responsive to changes in macroeconomic conditions. Table 7 includes several columns with different specifications, to address the problems raised by the estimation of a censored-variable model with panel data.⁹ The results which are easiest to interpret are those in columns (A) and (B).

Because of the way units were chosen, the regression coefficients in these columns are in fact elasticities. The units used for the dependent variable in columns (C) and (D) allow to verify the sign and significance of the results obtained in the other two columns, but they yield coefficient values with no straightforward interpretation.

While the levels of minimum wages in CFA countries could be criticized as being too high, the way these levels are adjusted to changes in macroeconomic conditions is more difficult to object. The estimated elasticity of the optimal minimum wage with respect to both aggregate prices and real output is almost one. The unit elasticities imply that the *real* minimum wage fully incorporates the effects of real shocks, but is not affected by nominal shocks. Moreover, the elasticity of the optimal minimum wage with respect to the terms-of-trade level is about 0.3, which roughly corresponds to the average

⁹ The main problem is how to deal with country-specific disturbances. In a linear regression, the standard solution is to use the fixed effects approach, which entails replacing the explained variable by its deviation with respect to the country mean. But in a censored-variable regression the latent variable is not always observable, implying that the country mean cannot be calculated. One possible solution is to assume that disturbances follow the same distribution in all countries. This is the assumption underlying the specification in column (A). While it may be objected in the general case, it is plausible here, due to the influence of France on the economic policies of all CFA countries. In practice, this assumption holds true if there is a common policy rule across the CFA zone, with changes in the SMIG at the country level reflecting random deviations from that rule. A different way to implement the fixed effects approach is to include a dummy for each of the countries among the explanatory variables. Computing capabilities rule out this solution when the number of individuals in the panel is large, while the number of periods is small. But the panel considered here involves only a few countries, so that this is a feasible alternative. The results are reported in column (B). Although the implicit assumption in this case is that the policy rule may differ across countries, the similarity between the results in columns (A) and (B) is striking. In both columns, the Tobit estimation method is used. Columns (C) and (D), in turn, apply a methodology first introduced by Chamberlain (1980). The explained variable is now set equal to zero when the minimum wage does not change, and equal to one when it is raised. This transformation of the explained variable allows using the fixed effects approach in non-linear models, such as the censored-variable model. The coefficients in equations (C) and (D) are Logit estimates.

openness coefficient of CFA countries. Therefore, the way minimum wages react to real shocks takes into account not only the domestic fluctuations in total productivity, but also the fluctuations stemming from external shocks.

The results in Table 7 also indicate that in the absence of any change in the macroeconomic conditions, the real value of the optimal minimum wage would decrease over time. If both the terms-of-trade level and the level of real output remained constant, the minimum wage would not be adjusted even in the presence of a significant price increase. Taken at face value, the independent term in column (A) implies that the minimum wage would be raised only if the annual inflation rate exceeded 25 percent. Obviously, this figure should not be interpreted literally. It suggests, however, that policy makers in CFA countries not only reacted in a sensible manner to real shocks, but also took advantage of inflation to gradually correct the initial misalignment of their minimum wages.

In spite of being endogenous, minimum wages could still entail potentially relevant distortions to the allocation of resources. Based on the obtained results, it is nonetheless difficult to claim that these distortions were bigger at the time of the devaluation than in the relatively prosperous 1970s. Even in the absence of the adverse shocks experienced by CFA countries since then, minimum wages would have declined in real terms. Moreover, if the fluctuations of average wages followed those of minimum wages, the magnitude of the distortions stemming from the latter should have remained roughly unchanged subsequent to these shocks. Which suggests that the real causes of wage misalignment lie elsewhere..

6. Other Potential Explanations

a) Trade unions

Trade unions are another obvious candidate to explain wage misalignment. Although the labor movement is numerically weak in CFA countries, it is well implanted in the formal sector of the economy. Moreover, it has been traditionally well connected to the political party in power, which in principle should give it more leverage. Unfortunately, there are only a few studies analyzing in detail what trade unions actually do in CFA countries, and they generally adopt a

sociological perspective (see, for instance, Ndiaye and Tidjani, 1995). The available economic studies, in turn, are based on quite small samples. The interesting thing, however, is they all find that union members earn less than similar, non-unionized wage earners.

The available estimates of the union wage premium in CFA countries are reported in Table 8. The figures in this table indicate the percent change in earnings an individual with “average” characteristics would experience by shifting from a non-unionized to a unionized activity. These figures are based on Mincerian equations which include a dummy variable for unionization among their explanatory variables. The fact that union wage premia are negative suggests that union members may get other, non-wage benefits that compensate for the lower earnings. But this is also the case in other countries, while the negative premium is highly atypical from an international perspective. In developing countries, union members usually make 5 to 30 percent more than their non-unionized counterparts.

Table 7

Minimum Wage Endogeneity

| Explanatory variables | Dependent variable: annual change in the log of the minimum wage | | Dependent variable: annual change in minimum wage (1 if raised, 0 otherwise) | |
|--|--|----------------------|--|----------------------|
| | Tobit estimates | | Logit estimates | |
| | (A) | (B) | (C) | (D) |
| Change in the log of terms of trade (lagged two years) | 0.3193 ** (2.042) | 0.3177 ** (2.036) | 2.7294 ** (2.162) | 2.7325 ** (2.116) |
| Change in the log of output at constant prices (lagged one year) | 1.0943 ** (2.480) | 1.0774 ** (2.420) | 7.3127 ** (2.211) | 7.1094 ** (2.116) |
| Change in the log of consumer prices (lagged one year) | 1.1033 ** (3.312) | 1.0924 ** (3.228) | 9.0364 ** (3.520) | 9.0920 ** (3.440) |
| Country-specific dummy variables | No | Yes | No | Yes |
| Independent term | -0.2508 ** (-5.064) | | -1.8457 ** (-6.587) | |
| Number of observations | 187 | 187 | 187 | 187 |
| Pseudo R ² | 0.185 | 0.207 | 0.116 | 0.134 |
| Chi-square test | 24.49 | 27.47 | 24.91 | 28.76 |

Note: All variables are defined at the country level. Values in parentheses are "t" statistics. Significant coefficients at the 5 and 1 percent level are indicated by one and two asterisks respectively.

Low or even negative union wage premia would be consistent with the "subordinate" nature of the labor movement in many CFA countries (see Nelson, 1991). Trade unions may have been instrumental in implementing the wage moderation policies set up by governments in this region in recent years. Although this pattern may change as competition

between unions develops in the workplace, it would be difficult to make them responsible for the wage misalignment observed in the late 1980s and early 1990s.

b) Government pay policies

Fluctuations in formal sector wages were shown to follow closely those in average government wages. This link is hardly surprising, given that public sector employment represents about one half of formal sector employment in CFA countries, if not more. Government pay policies therefore emerge as a potential explanation for wage misalignment. The issue is whether government wages are high enough for this explanation to be relevant in practice. This issue can be addressed applying the same methodology that was used to measure the earnings gap between formal and informal sector jobs, or between union and non-union jobs. But it is important to keep in mind that some of the advantages of working for the government are not reflected in higher wage earnings. These advantages include more job security, better fringe benefits, lower effort levels, the possibility of moon-lighting (i.e. having two jobs) or even of taking bribes. A similarity between the cash earnings of public and private sector employees would thus imply that the former are better off than the latter.

Table 9

Wage Premium for Public Sector Jobs

| Study | Estimation technique | Burkina Faso | Cameroon | Côte d'Ivoire | Mali | Senegal |
|--|--|------------------------------------|------------------------------------|---|---------------------------------|---------------------------------|
| Berthélémy and Bourguignon (1992; Table 4.4, page 98) | OLS with dummy variable for government jobs | | | - 14.3 % [CILSS, 1985; N = 311] | | |
| Lachaud (1993a; Table 6, page 20) | OLS plus Probit for self-selection of jobs | 20.5 % [IIES, 1990-91; N = 234] | 38.4 % [IIES, 1990-91; N = 293] | 12.6 % [IIES, 1986-87; N = 277] | 34.8 % [IIES, 1991; N = 379] | 19.0 % [IIES, 1991; N = 243] |
| Lachaud (1993c; Table B, pages 45-46) | OLS with dummy variable for public sector jobs | | | - 28.0 % [Census, 1988; N = 181,757] | | |

(Continued)

Table 9 (Contd.)

Wage Premium for Public Sector Jobs

| Study | Estimation technique | Burkina Faso | Cameroon | Côte d'Ivoire | Mali | Senegal |
|--|--|--------------|------------------------------------|---|------|---------|
| Levy and Newman (1989; Table 6, page 106) | OLS with dummy variable for public sector jobs | | | - 17.3 % [ONFP, 1984; N = 10,835] | | |
| Miller and Vallée (1995; Table 6.5, page 163) | OLS with dummy variable for 100% private firms | | 11.1 % [RPED, 1994; N = 517] | | | |
| Van der Gaag <i>et al.</i> (1989; Table 5, page 28) | FIML with switching regression model | | | - 26.5 % [CILSS, 1985; N = 513] | | |

Note: Depending on the studies, the public sector may or may not include state-owned enterprises. All studies control for individual characteristics, but the set of controls varies across studies. The wage premium is based on the coefficient (c) multiplying the public sector dummy variable, except in the case of Berthélémy and Bourguignon (1992), where it is based on the difference between coefficients for government and other formal sector jobs. For large values of the c coefficients, in absolute terms, the percent premia is approximated as $100[\exp(c)-1]$. Data sources and sample sizes are reported in brackets. CILSS is the Cote d'Ivoire Living Standards Survey, a household survey with national coverage. IIES is a series of labor force surveys carried out by the Institut International d'Etudes Sociales in the capital cities. ONFP is a plant-level survey covering large firms, but reporting data on individual workers. RPED is the Regional Program for Enterprise Development, a plant-level survey which includes data on up to 10 workers in each firm.

owned commercial enterprises. Although the number of studies is quite limited, some of them involve thousands of observations, which increases their reliability. With the exception of Côte d'Ivoire, where the wage premium is negative, public sector employees thus appear to make around 10 to 30 percent more than their private sector fellows.¹⁰

Taking non-wage benefits into account, these studies imply that working for the public sector entails significant rents. Moreover, the comparison in Table 9 is mainly based on wages. It therefore involves formal sector jobs, be these public or private. It was shown above that wages in the private, formal sector of the economy were much higher than other labor earnings. The results reported in Table 9 imply that public sector wages are even higher. This conclusion, together with the finding that wages in the private formal sector follow closely the fluctuation of public sector wages, suggests that government pay policies are one of the main driving forces of wage misalignment in CFA countries.

c) Product market distortions

Another potential culprit for wage misalignment are the rents created by barriers to competition in product market. If they had some monopoly power, firms could behave as price makers rather than price takers. The prices they would charge for their products would usually involve some mark-up over their unit costs, including labor costs, with the mark-up ratio being larger the higher their monopoly power. Therefore, a stable relationship between wages and prices,

¹⁰ The Ivorian result was surprising enough to prompt van der Gaag *et al.* (1989) to use data on moon-lighting to check that the estimated earnings differentials made sense. They found that moon-lighting was more prevalent among public sector workers than among those in the private sector. They also found that the wage disadvantage of public sector employees was an important determinant of moon-lighting. This latter result can be seen as an additional confirmation that the wage premium is negative in Côte d'Ivoire.

like one the identified in Tables 4 and 5, would exist. Moreover, as long as replacing incumbent workers is costly, insiders could capture some of the rents created by barriers to competition in product markets. As a result, a stable relationship between wages and alternative earnings (including government wages) would emerge.

Countries in the CFA region are said to be characterized by significant monopoly power in product markets. A few firms operate in each industry, quite often under the umbrella of some *convention spéciale* with the government, involving tax exemptions and other preferential treatments. It would not be surprising if workers in these firms managed to secure a share of the resulting rents, under the form of wages well above other labor earnings in the economy. Note that rent sharing would be feasible even if trade unions did not push for high wages. Substantial firing costs, like those characterizing CFA countries during most of the period under consideration, would be enough for barriers to competition in product markets to lead to both high domestic prices and high formal sector wages.

Unfortunately, there is no empirical evidence to support (nor to reject) the hypothesis that limited competition in product markets is one of the reasons for wage misalignment in CFA countries. The standard way to check this hypothesis is to estimate Mincerian equations that include indicators of profitability at the firm or the sectoral level among the control variables. A positive coefficient multiplying these profitability indicators can be interpreted as evidence of rent sharing by workers. The only such estimate available for CFA countries uses the effective protection rate as one of the arguments in the Mincerian equation (Terrell and Svejnar, 1989). The coefficient multiplying this variable turns out to be statistically insignificant, but the sample is small and the effective protection rate is not the most appropriate measure for rents. This single estimate being inconclusive, the claimed link between wage misalignment and limited competition in product markets remains plausible, but it is by no means certain.

7. Conclusion

This paper has shown that wage misalignment was substantial in CFA countries over the 1980s and early 1990s. Formal sector wages were much higher than in other countries with a similar development level, and also much higher than labor earnings in the informal sector of the economy. However, the paper has also shown that wage misalignment cannot be traced down to the labor market policies and institutions in force in any obvious manner. Particularly, it has produced evidence that minimum wages did not play a major role in obstructing the adjustment to the adverse external shocks of the late 1970s. From a cross-country perspective, minimum wages were not high enough to explain a significant share of the observed misalignment of wages. From a time-series perspective, they decreased in real terms and were adjusted in a sensible manner to changes in the macroeconomic context. Trade unions do not appear to be at the roots of wage misalignment either.

None of these findings implies that the labor market of CFA countries is flexible. The results in the paper actually suggest that formal sector wages are rigid. But they appear to be rigid in real terms, rather than in monetary terms. Their level fluctuates in line with that of other key prices in the economy, such as average government wages or consumer prices. One explanation for this finding is related to government pay policies. Given how large the public sector is compared to the private formal sector, and given also how high its salaries are in relative terms, government pay policies may strongly influence labor market outcomes in CFA countries. Another plausible, but more hypothetical explanation is the existence of barriers to competition in product markets. Monopoly power in product markets, combined with high costs

of replacing incumbent workers, could indeed account for high domestic prices, high formal sector wages, and a stable relationship between the two.

If wages are rigid in real terms, rather than in nominal terms, devaluing the CFA Franc can boost competitiveness and reduce wage misalignment only for a limited time. Real distortions, like those entailed by barriers to competition in product markets, cannot be fixed by changing the level of nominal instruments. Of course, real wages may drift back to their original levels at a slow pace, especially because CFA countries were sheltered from exchange rate fluctuations for decades. But devaluations are increasingly ineffective as private sector agents become used to them. If real reforms are not undertaken, there is a risk that moving in the direction of a more flexible exchange rate may only result in ever higher inflation rates.

More generally, the results in this paper cast doubts on the conventional wisdom regarding adjustment in CFA countries. It seems widely accepted that the main obstacle to a deflationary adjustment was the downward rigidity of formal sector wages. But the analysis for Côte d'Ivoire and Senegal shows that both wages in the formal sector and labor earnings in the informal sector increased substantially during the 1980s and early 1990s. If anything, labor earnings in the informal sector increased at an even faster pace than wages in the formal sector. Which suggests that the alleged deflationary pressure failed to materialize. Although a detailed analysis of the reasons why this may have happened is clearly beyond the reach of this paper, a quick discussion is warranted to put any recommendations for labor market reform in the proper context.

Two complementary explanations can be given for the failure of deflationary pressures to materialize. The first one involves the budget institutions of CFA countries. Adverse external shocks may have led to an increase in the budget deficit due to a tax structure relying excessively on foreign trade (Nashishibi and Bazzoni, 1994). Marketing board mechanisms, aimed in

principle at stabilizing the domestic price of exports, may have played an important role in this respect. Since the “stabilization” tends to happen at low domestic prices, a one-dollar decrease in commodity exports translates automatically into a one-dollar decrease in government revenue. The same happens with oil exports. As long as government expenditures remain constant, changes in the budget deficit thus offset any terms-of-trade effect.

The monetary counterpart to this excess spending by the government can be found in the institutions underlying the CFA Franc. In the 1970s, part of the central banking authority regarding the CFA Franc was transferred from France to the region. Some relaxation of the monetary discipline ensued, as reflected by the increase of the ceiling on outstanding government debt, from 10 to 20 percent of tax revenue in the previous year. Devarajan and Walton (1994) claim that this and other arrangements allowed significant fiscal laxity. Because all member countries share the same currency, the fiscal excesses of one country potentially spill over to the union as a whole. As shown by Aizenman (1992), the lack of coordination between decision makers, each of whom can effectively increase the money supply, can be expected to create an inflationary bias.

Although this is an over-simplified interpretation of events, it sheds a new light on the relationship between wage misalignment on the one hand, and labor market policies and institutions on the other hand. In this interpretation, both wages and prices in the formal sector of CFA countries were high to begin with because of government pay policies and, possibly, also because of significant barriers to competition in product markets. They became increasingly misaligned over time due to significant budget deficits, fueled by the combined effect of ill-designed budgetary and monetary institutions. If the interpretation is to be accepted, its policy implications are straightforward. A monetary mechanism imposing more discipline on government expenditures, a tax system relying less on exports and more competition in product

markets would be needed to reduce the risk of over-valuation when facing adverse external shocks.

As regards labor market reform, it would certainly be key to improve microeconomic efficiency. Relaxing firing and hiring regulations, as several CFA countries already did, would facilitate labor reallocation across sectors and help firms survive when confronted with adverse shocks. Allowing a more decentralized wage bargaining, and not forcing firms and workers who are not represented in the negotiation to be subject to it, would also be welcome. More generally, reforms of the labor market policies and institutions of CFA countries in line with the recommendations of the World Bank (1995a and 1995b) should be beneficial. But it would be naive to see these reforms as a safeguard against wage misalignment if the budgetary and monetary institutions of CFA countries remain unchanged.

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