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10 Exchange Rates, Wages, and Productivity

In this chapter we continue our discussion of exchange rate policy in Korea. We focus on the linkage between exchange rates and competitiveness, and relate them to labor productivity and to the behavior of nominal wages. The issues are especially interesting because of one unusual aspect of Korea's adjustment: real wages rose by 43 percent during 1982–86 despite a 34 percent depreciation of the real exchange rate.[1] The puzzle emerges, not because negatively correlated real wages and exchange rates are theoretically implausible, but because there seem to be so few examples in practice. Many countries would like to devalue so as to improve competitiveness and external balance, but avoid doing so precisely because of a desire to maintain real incomes and consumption.

The links between real exchange rates and real wages are important precisely because they embody the tradeoffs between competitiveness and the standard of living. It is widely recognized that a nominal depreciation which does not result in a real depreciation because of induced rises in domestic goods and factor prices is likely to have little effect on the trade balance. At the same time, domestic real incomes will decline if wages do not rise enough to offset the loss in purchasing power from higher traded goods prices. A reduced standard of living is often viewed as the price paid for an increase in competitiveness.

In addition to these issues, capital flight problems and fiscal and monetary policy are also integral to exchange rate policy decisions (Diaz Alejandro 1981 and Dornbusch 1985b). Latin American countries, in particular, have suffered from large budget deficits financed by money creation, massive capital flight, high inflation rates, and overvalued currencies. Accelerating wages and prices which exacerbate the overvaluation are especially likely when a government adopts an accommodating macroeconomic policy—expectations of an accommodating policy will tend to result in slower adjustment of wages in response to unemployment (Dornbusch 1982).

Korea has a very different background: sound fiscal policy, strict capital controls which rule out capital flight, and wages which are not indexed to past inflation. Furthermore, rapid productivity growth has mitigated the conflicts between competitiveness and real income. Active government policies in allocation of resources seem to have enhanced productivity growth.

This chapter explores lessons from the Korean episode. The first section discusses the relationship between the various relative price measures. In particular, we focus on the real wage, an important internal relative price, and various external relative prices, including a number of measures of the

real exchange rate. Section 10.2 documents the behavior of real wages and exchange rates. In Section 10.3 we examine the determinants of wages. The chapter concludes with a discussion of the lessons to be learned and the implications for policymakers in other countries.

10.1 Theoretical Background

This section specifies the relationship between real wages and real exchange rates. We begin by defining key variables.

e = won/foreign currency (nominal effective exchange rate);
w is the nominal wage;
P_i, $i = X,M,N$ are indices for export, import and nontraded goods prices;
$\rho = P_X^{\alpha} P_M^{\beta} P_N^{\gamma}$ is the Korean CPI, where $\alpha+\beta+\gamma=1$;
ρ^* is a foreign price index;
$P_T = P_X^{\alpha/(\alpha+\beta)} P_M^{\beta/(\alpha+\beta)}$ is an index of traded goods prices;
θ_i, $i=T,N$ are indices of labor productivity (output/worker) in the tradable and nontradable goods sectors.

There are four variables of interest. Equations (1) and (2) give two measures of the real exchange rate. The first is the typical measure relating domestic and foreign prices. The second is the ratio of traded to nontraded goods prices in Korea. An increase in either represents a real depreciation.

$$R = e\rho^*/\rho \tag{1}$$

$$\mu = P_T/P_N \tag{2}$$

Equation (3) denotes the real wage while equation (4) denotes unit labor costs of tradable goods measured in foreign currency, another measure of competitiveness.

$$\omega = w/\rho \tag{3}$$

$$\zeta = w/(e\cdot\theta_T) \tag{4}$$

To highlight the role of labor productivity in determining the behavior of these four variables, we assume a very simple price setting structure. Korea is assumed to take the price of imported goods as given. Export and nontraded goods prices are assumed to be determined by costs. Both types of goods are produced using labor and imported intermediates.

$$P_M = e\cdot P_M^* \tag{5}$$

$$P_X = \left(\frac{w}{\theta_T}\right)^a P_M^{1-a} \tag{6}$$

$$P_N = \left(\frac{w}{\theta_N}\right)^b P_M^{1-b} \tag{7}$$

Substituting (5)–(7) into equations (1)–(3) allows us to rewrite the real exchange rates and the real wage in terms of labor productivity, nominal wages, the nominal exchange rate, and the world price of imports.

$$R = \rho^* \cdot \left(\frac{e}{w}\right)^{\alpha a + \gamma b} \frac{\theta_T^{\alpha a} \cdot \theta_N^{\gamma b}}{(P_M^*)^{1-\alpha a-\gamma b}} \tag{8}$$

$$\zeta = \frac{\theta_N^b}{\theta_T^{a\delta}} \cdot \left(\frac{e \cdot P_M^*}{w}\right)^{b-a\delta}, \qquad \delta \equiv \alpha/(\alpha+\beta),\ b - a\delta > 0 \tag{9}$$

$$\omega = \theta_T^{\alpha a} \cdot \theta_N^{\gamma b} \cdot \left(\frac{w}{e \cdot P_M^*}\right)^{1-\alpha a-\gamma b} \tag{10}$$

A comparison of equations (8) and (9) shows how the two real exchange rate measures might move in opposite directions. If labor productivity grows more quickly in the tradables sector than in the nontradables sector, R will depreciate but the domestic relative price of nontradables will rise, implying that μ will appreciate. Note that $b - a\delta$ is likely to exceed one. It must do so if tradable goods production uses more imported intermediates than nontradables.

Equation (10) shows that the real wage increases when labor productivity rises in either sector, when nominal wages rise relative to the domestic price of importables, or when the nominal exchange rate appreciates. However, real depreciations result from nominal wage declines or nominal depreciations (eq. [8] and [9]), creating a tradeoff between competitiveness and the standard of living.

Equations (8) and (10) also show that productivity growth can eliminate the sharp conflict between these two objectives by creating a cushion. Real wages may rise while the real exchange rate depreciates (and unit labor costs in foreign currency fall), and as long as productivity is growing strongly enough. The condition for this scenario is that nominal wage growth exceed the domestic inflation rate but not the sum of nominal depreciation and productivity growth.

10.2 The Korean Experience

In table 10.1 we present data on the behavior of wages, prices, productivity, and unit labor costs in manufacturing since 1960. The table presents two measures of productivity. One (col. A) comes from surveys conducted by the KPC, while the other (col. B) gives value added per employee (VA). Neither is an ideal measure, and it is difficult to classify one as consistently better. Unfortunately, the two tell different stories. While real wages grew on average by 8.5 percent per year during 1964–86, manufacturing productivity grew by 6.8 percent according to VA but by 12.4

Table 10.1 **Wages, Productivity, and Unit Labor Cost in Manufacturing (in percentages)**

	Nominal Wages (A)			Real Wages		Labor Productivity				Unit Labor Cost (Won)				Unit Labor Cost (U.S. dollars)			
Year	Index	Change	CPI (1980 = 100)	Index	Change	KPC Index (B)[a]	Change	Value added per employee (C)	Change	A/B	Change	A/C	Change	A/B	Change	A/C	Change
1960	1.6		6.4[b]	24.9		11.1				14.3							
1961	1.8	12.0	6.9[b]	25.7	3.2	12.5	12.6			14.2	−0.5						
1962	1.9	6.5	7.4[b]	25.7	−0.0	12.8	2.4			14.8	4.0			69.2			
1963	2.2	14.4	8.9[b]	24.5	−4.9	13.6	6.3	30.3		15.9	7.7	7.2		74.3	7.4	33.4	
1964	2.6	22.0	11.5[b]	23.0	−6.2	14.8	8.8	31.9	5.3	17.9	12.1	8.3	15.9	50.8	−31.6	23.6	−29.5
1965	3.1	18.6	12.5	25.1	9.5	17.4	17.6	31.7	−0.6	18.0	0.8	9.9	19.2	41.1	−19.2	22.6	−4.3
1966	3.7	17.8	13.9	26.6	5.9	18.1	4.0	34.5	8.7	20.4	13.3	10.7	8.4	45.7	11.2	24.0	6.5
1967	4.5	22.0	15.3	29.4	10.4	21.3	17.7	34.2	−0.8	21.2	3.6	13.2	23.4	47.6	4.2	29.7	23.8
1968	5.7	27.1	17.0	33.7	14.6	25.6	20.2	37.8	10.4	22.4	5.7	15.2	14.6	49.2	3.3	33.3	12.0
1969	7.7	34.2	19.1	40.2	19.3	32.3	26.2	43.9	16.1	23.8	6.3	17.5	15.6	50.1	1.9	36.9	10.9
1970	9.7	26.9	22.2	43.9	9.3	36.4	12.7	53.6	22.3	26.8	12.6	18.5	5.6	52.3	4.4	36.2	−2.0
1971	11.3	16.2	25.2	45.0	2.4	39.9	9.6	61.1	13.9	28.4	6.0	18.5	0.2	49.2	−6.0	32.4	−10.4
1972	12.9	13.9	28.1	45.9	2.0	43.4	8.8	64.1	5.0	29.7	4.7	20.1	8.5	45.8	−6.9	31.1	−4.1
1973	15.2	18.0	29.0	52.5	14.3	47.2	8.8	67.3	5.0	32.3	8.5	22.6	12.4	42.3	7.6	34.5	10.9
1974	20.6	35.3	36.1	57.1	8.8	62.6	11.4	68.9	2.4	39.2	21.4	29.9	32.1	58.7	19.1	44.9	30.1
1975	26.2	27.0	45.2	57.9	1.4	58.7	11.6	70.5	2.2	44.6	13.8	37.1	24.3	56.0	−4.6	46.6	3.9
1976	35.2	34.7	52.1	67.6	16.8	63.1	7.5	72.2	2.4	55.8	25.3	48.8	31.5	70.1	25.1	61.3	31.5
1977	47.2	33.8	57.4	82.2	21.5	69.7	10.5	79.6	10.3	67.7	21.2	59.2	21.3	85.0	21.3	74.3	21.3
1978	63.3	34.3	65.7	96.5	17.4	78.0	11.9	89.6	12.6	81.2	20.0	70.7	19.3	101.9	20.0	88.7	19.3
1979	81.5	28.6	77.7	104.9	8.7	90.4	15.9	104.0	16.0	90.1	11.0	78.3	10.9	113.1	11.0	98.3	10.9
1980	100.0	22.7	100.0	100.0	−4.7	100.0	10.6	100.0	−3.9	100.0	11.0	100.0	27.7	100.0	−11.6	100.0	1.7
1981	120.1	20.1	123.3	97.4	−2.6	118.1	18.1	111.1	11.1	101.7	1.7	108.1	8.1	90.7	−9.3	96.4	−3.6
1982	137.8	14.7	132.3	104.1	6.9	127.3	7.8	109.1	−1.8	108.2	6.4	126.3	16.9	89.9	−0.9	104.9	8.9
1983	154.6	12.2	134.5	115.0	10.4	144.6	13.6	113.7	4.2	106.9	−1.2	136.0	7.7	83.7	−6.9	106.5	1.5
1984	167.2	8.1	137.6	121.5	5.7	159.8	10.5	127.4	12.0	104.6	−2.1	131.2	−3.5	78.8	−5.8	98.9	−7.1
1985	183.8	9.9	141.0	130.4	7.3	171.1	7.1	126.4	−0.8	107.4	2.7	145.5	10.8	75.0	−4.9	101.6	2.7
1986	200.6	9.1	144.2	139.1	6.7	194.4	13.6	135.9	7.6	103.2	−3.9	147.7	1.5	71.1	−5.1	101.8	0.2

Source: BOK, *Economic Statistics Yearbook,* various issues.

[a]Index made by Korea Productivity Center using output per production worker.

[b]Consumer price index in Seoul.

percent according to the KPC. While the KPC measure was widely used during the 1970s, it suggests implausibly rapid productivity growth during the crisis of the early 1980s. For this reason, and for reasons of comparability, the VA measure has become more widely used recently. Our discussion will refer to both series.

A key point that emerges from table 10.1, together with the exchange rate data in table 9.7, is that Korea has experienced a number of years in which real wages grew while the real exchange rate depreciated. The combination occurred during both 1971–73 and 1982–85.

However, it is important to point out that real wages have not increased continuously during the Korean industrialization. They declined both at the outset of Korea's export-led growth and as Korea reestablished its competitive position after the 1975–79 real appreciation. Real wages fell by 10.5 percent during 1962–64 despite a 15.1 percent increase in labor productivity (KPC), and by 7.1 percent during 1980–81 despite 30.6 percent (KPC) or 6.7 percent (VA) growth in productivity.

Both measures of productivity identify the 1973–79 Big Push as a period in which rapid real wage gains outstripped productivity growth. As discussed further below, the rapid nominal wage increases during this period have been attributed to competition for scarce skilled labor, in conjunction with the push toward heavy industry. At the same time, the expansion of overseas construction contracts exacerbated the shortages of some types of domestic labor, with the resultant wage increases spreading to workers elsewhere.

We examined the real wage behavior in more detail over four time periods from 1964 to 1985 in table 10.2. From equation (10) the key factors are the nominal wage relative to the domestic price of imports and labor productivity. In the discussion below, we focus on the VA measure of productivity.

The table shows that the 1969–73 slowdown in real wages is in part attributable to a slowdown in overall productivity, but that the more important factor is a decline in nominal wages relative to imports. This represents both a moderation of nominal wage gains and a deterioration in the terms of trade.

Real wage growth accelerated during 1973–79. During this period, very rapid nominal wage gains offset continued terms of trade deterioration. The slowdown in 1979–85 again arises from reduced productivity growth combined with a substantial deceleration of nominal wage gains. Real wages fell at the beginning of the recent adjustment (1980–81), with all productivity gains going to increase competitiveness. This, plus exchange rate depreciation, improved Korea's competitive position.

The table very clearly shows that real wages have grown more quickly during real appreciations. However, there has been no clear relation between real wage growth and the terms of trade. Not surprisingly, rising domestic production costs during periods of rapid real wage growth have tended to increase the price of nontradables relative to imported goods. In addition,

Table 10.2 **Determinants of the Real Wage–Exchange Rate Linkage (average annual percentage change)**

Period	Real Wage	Real Effective Exchange Rate	Relative Price of Imported to Nontraded[a]	Terms of Trade	Labor Productivity (KPC)	Labor Productivity (Value Added)			Wages in Terms of Imports[b]	Real Capital Cost	Trade Liberalization Ratio[c]
						Manufacturing	Nonmanufacturing	Total			
1964–69	10.6	−3.7	−10.0	3.5	16.9	6.6	5.9	5.9	21.3	3.0	93.0
1969–73	6.9	8.1	2.3	−1.4	9.9	11.3	2.7	4.2	0.7	−3.3	−1.4
1973–79	12.2	−4.8	−5.9	−1.4	11.5	7.5	4.9	6.1	13.4	−0.4	5.3
1979–85	3.7	3.8	1.4	−1.4	11.2	3.3	4.5	4.2	2.5	−0.1	4.2

[a](Dollar unit price of imports × nominal exchange rate)/nonmanufacturing deflator.

[b]Nominal wages in manufacturing/(dollar unit price of imports × nominal exchange rate).

[c]Based on calculation in K. S. Kim (1986).

there is some evidence of a positive correlation between real wage gains and labor productivity growth.

From the table, we can also support the view that exchange rate policy has been used to offset slowdowns in productivity growth and to maintain Korea's competitiveness in international markets. Authorities depreciated the real exchange rate during 1969–73 and 1979–85. Overall productivity (VA) had declined in both periods. In contrast, the fixed exchange rate and real depreciation of the 1970s coincided with rapid overall productivity gains, although productivity growth slowed in the manufacturing sector.

We have already seen that the real exchange rate (R) appreciated in some periods but depreciated in others, despite the fact that productivity grew rapidly by international standards throughout. However, using the price of traded relative to nontraded goods (μ) as a measure of the real exchange rate, Korea has experienced a continuous real appreciation, as shown in table 10.3. To compute these figures, we use manufacturing and nonmanufacturing as proxies for the traded and nontraded goods sectors respectively.

One reason for the faster inflation in the nontraded goods sector has been relatively slower productivity growth in that sector. Differential inflation rates emerged in the mid-1960s as productivity growth accelerated in the manufacturing sector. According to the VA measure, productivity growth in nontradables began to outpace productivity growth in manufacturing in the 1980s. As shown, the inflation differential narrowed considerably during this period.

It is interesting to compare unit labor costs in Korea with the costs of its main trading partners and with costs in other newly industrialized nations, which compete with Korea in third markets. Korean unit labor costs measured in U.S. dollars declined by 30.3 percent from 1979 to 1984. In contrast, the U.S. Department of Labor reports that dollar unit labor costs for U.S. industries rose by over 22 percent during the same period. Japanese unit labor costs declined by 3.7 percent measured in yen and 11.6 percent measured in dollars.

The figures in table 10.4 compare the Korean and Taiwanese growth rates of unit labor costs measured in U.S. dollars. During the late 1970s, the rapid increases in Korean wages implied a substantial loss in competitiveness vis-à-vis Taiwan. During 1979–82, however, Korean labor costs grew by just 2 percent per year, compared with nearly 10 percent annual growth in Taiwan. The divergence persisted during 1982–86 as Korea's major depreciation led to a decline in labor costs. Although the countries have had similar gains in productivity, exchange rate policy in Korea has significantly improved its position relative to that of Taiwan.

10.3 Wage Determination in Korea

The above discussion highlights the magnitude of nominal wage adjustments as a factor in Korea's ability to combine depreciation with real

Table 10.3 **Relative Price of Manufacturing Goods and Productivity (average annual percent change)**

Period	Deflator			Labor Productivity[a]			Real Effective Exchange Rate	Relative Price of Imported to Nontraded[b]
	Manufacturing (A)	Nonmanufacturing (B)	Relative Price (A/B)	Manufacturing (A)	Nonmanufacturing (B)	Relative Productivity (A/B)		
1960–64	22.0	22.2	−0.2	−1.4	8.2	−8.9		
1964–69	8.0	13.3	−4.6	6.6	5.9	0.6	−3.7	−10.0
1969–73	9.3	15.3	−5.2	11.3	2.7	8.4	8.1	2.3
1973–79	17.2	23.8	−5.4	7.5	4.9	2.5	−4.8	−5.9
1979–85	8.0	10.2	−2.1	3.3	4.5	−1.1	3.8	1.4

[a]Labor productivity is defined here as the value-added per worker.

[b](Dollar unit price of imports × nominal exchange rate)/nonmanufacturing deflator.

Table 10.4 **Unit Labor Costs in Manufacturing (in U.S. dollars, average annual percentage change)**

Period	Korea	Taiwan
1976–79	17.06	13.98
1979–82	2.20	9.74
1982–86	−0.76	4.95

Source: BOK, *Economics Statistics Yearbook*, various issues, and *Statistical Yearbook of the Republic of China*, various issues.

Note: Unit labor costs are defined as the nominal wages relative to value-added productivities.

wage increases. Throughout most of its recent history, nominal wages have grown more quickly than prices, however real wage increases have frequently been bounded by productivity growth (see table 10.1).

This section provides an overview of key aspects of Korean labor markets to shed some light on the determinants of nominal wage growth. We focus on characteristics evident during Korea's industrialization and adjustment to the 1979–80 crisis. The demonstrations, strikes, and other labor activities since 1986 may signify some important changes in wage determination and in the relationship between workers, management, and the government. However, it is too early to assess these developments.

The discussion, which draws heavily on work by Kim Sookon (1982) and Lindauer (1984), is based on data for wages and compensation of private, nonagricultural workers in the formal sector and of public sector employees. Unfortunately, earnings data for the informal urban sector, consisting of small-scale and family businesses, are not available.[2] The discussion begins with an outline of compensation, labor mobility, and the role of institutional factors in Korean labor markets. It then focuses on wage determination, considering the relevance of a competitive labor market model for Korea, the link between wages and prices, and the importance of government intervention.

Employee compensation in Korea is quite complex.[3] The total is composed of a basic wage, allowances, and a bonus. The basic wage includes a starting wage plus annual increments arising, for example, from seniority, merit, and cost-of-living increases. It is typically the largest part of total compensation, ranging from 50 to 60 percent for production workers, and sometimes reaching 80 percent of compensation for managers, professionals, and technicians.[4]

The importance of allowances varies widely by industry and occupation. Some allowances, such as overtime and annual leave, are stipulated by the Labor Standards law. Many others, including allowances for special skills, family, housing, and transportation, are not. Their coverage differs widely across firms and across workers within firms.[5]

Bonuses are not required by law, but remain extremely widespread. In one study, every firm had paid out bonuses. Civil servants and public enterprise

employees also received bonuses. On average, bonuses amounted to 400 percent of base monthly earnings or about 15 percent of total compensation, however, again there was a wide variance, with large firms tending to pay out more. It is difficult to assess the extent to which bonuses are considered part of anticipated compensation. In general, they have fluctuated with market conditions, although some large firms have maintained the level of bonuses during downturns. Overall, bonuses seem to have been increasing as a share of compensation.

One implication of the special structure of compensation in Korea is that neither basic wage figures nor total compensation is an ideal measure of "required" unit labor costs, i.e., an indicator of competitiveness. The wage numbers underestimate costs since they exclude some required payments. However, total compensation may also be biased because of its endogeneity. An increase in bonuses during a profitable year would increase measured unit labor costs, erroneously indicating that Korea was becoming less competitive vis-à-vis other countries. A better measure would combine basic wage with those allowances which the firm was obligated to pay and with the minimum bonus from the implicit contract between employer and employees. Of course, such a measure is unavailable.

A second issue frequently discussed is the extent to which labor markets in Korea are characterized by Japanese-style lifetime employment. On the one hand, surveys show that 56 percent of Korean workers would expect to continue full-time work at normal pay during a major downturn.[6] On the other hand, there are no explicit guarantees, and there is substantial job turnover. Average monthly separation rates in manufacturing are above 5 percent in Korea, as compared to 4 percent in the U.S. and 2 percent in Japan. (S. Kim 1982, 27). Lindauer concludes that "lifetime or permanent employment systems such as those that exist in Japan are not a feature of any significant sector of the Korean economy" (1984, 61).

A third issue is whether institutional factors, such as unions and/or government interventions, played a significant role from the 1960s through 1985. The union movement in Korea remained weak and subject to strict government regulations. Until 1981 these regulations included a ban on strikes and a requirement of prior government approval for any collective bargaining activities. The Worker Council law in 1980 called for all firms with thirty or more employees to hold council meetings, with management and labor equally represented, to discuss productivity and other issues.[7] However, the right to negotiate wages was not stipulated. Only a few industries, notably textiles and some public enterprises (e.g., rail, telephone and telegraph, electric) had unions. At most, 20 percent of the industrial work force belonged to a union.

A consensus view is that unions have had a negligible impact on wages or total compensation, but that they have helped to increase job security. Those labor disputes which did occur focused not on wages and work conditions, but on issues of worker rights in the work place (S. Kim 1982, 62). Using

wage regressions we find the coefficient on unionization to be insignificantly different from zero, while separation rates tend to be substantially lower in unionized establishments.

Although the government did not establish explicit wage guidelines, there were a variety of less formal ways in which it could exert pressure on wage determination. There is also some evidence of intervention in private sector wage determination. In 1977, concern over real wage increases in excess of productivity growth led the government to announce that for monopolistic firms with controlled prices there would be a ceiling on allowed price increases due to rising labor costs.[8] At the same time, the government began to follow a policy which based wage increases on productivity increases. A reduction in the growth of public sector wages was announced in 1980.

While the Ministry of Labor continues to take a stand against direct government intervention in wage negotiations, the Ministry of Finance has seemed to favor some intervention since 1981. In November 1981 the BOK directed all banks to enforce a Korea Bankers Association (KBA) resolution to stop new loans to firms which, despite financial difficulties, increased wages beyond labor productivity.[9] This resolution was reiterated in 1982 as part of a nationwide mass media campaign to bring down inflation.

If implicit or explicit government policies significantly influenced wage determination, one would expect public sector wages to act as a signal for appropriate wage growth in the private sector.[10] Empirical evidence provides little support for the view that the government acted as a wage leader prior to 1980. There is no obvious correlation between public and private earnings. Public sector employees earned less than those working in the private sector, with the differential increasing with skill and educational levels. In response, public sector earnings rose much more rapidly than did private sector earnings from 1972 to 1976. During the push toward heavy industry in 1976–79, earnings grew more quickly in the private than in the public sector, outstripping productivity gains.[11] Since 1979 both public and private earnings growth rates have declined substantially. The moderation of public sector wages began in 1981 as part of the effort to reduce the fiscal deficit. Since then, the government has taken a more active stand on incomes policy, as discussed above. It is difficult to determine the importance of these factors, relative to the importance of changing economic conditions (notably the drop in inflation and the relative scarcity of skilled labor), in the subsequent slowdown of private wage growth.

Given all of the factors discussed above, what is an appropriate model for wage determination in Korea?[12] Most authors conclude that wages have been determined primarily by market forces since the early to mid-1970s. Lindauer bases his conclusion on the following findings for the formal sector: that real wage trends have been similar across industries, that the structure of interindustry earnings has been stable with a recent narrowing of the dispersion, and that educational wage differentials track relative

scarcities in skilled labor.[13] He concludes that the major inefficiency in Korean labor markets arises from the large and persistent wage and employment differences by sex. The rapid real wage increases during the 1970s have no obvious institutional explanation, but can be readily understood from changes in the structures of labor supply and demand. Amsden (1986), who finds a much greater role for government intervention, also concludes that market forces were the key factors in wage determination.

The evidence for a competitive model of wage determination for the 1980s is much less clear. As pointed out above, it is difficult to distinguish market pressures from direct and indirect government pressures. It is also difficult to assess the extent to which the government became more interventionist. On the one hand, collective bargaining regulations were relaxed. On the other hand, government attention to incomes policies clearly increased. This concern, together with the increased leverage of the banking system over private firms, expands the scope for intervention. We conclude this section by highlighting some features of the Korean labor market. First, there is relatively little inertia in the wage-setting process in Korea. Instead of a backward-looking or indexation scheme, wages seem to react quickly to changing market conditions. Second, the increased reliance of the private sector on the organized domestic financial sector during the early 1980s expanded the government's ability to exert an influence on private sector wage determination. Finally, organized resistance to any pressure (actual or potential) on wages from the government was negligible through the mid-1980s. There has been a marked increase in worker activism since 1986, however, it is too early to assess the longer term implications.

10.4 Discussion

This chapter has highlighted two factors in explaining Korea's ability to combine a real depreciation with real wage growth. The key has been rapid increases in labor productivity which drive a wedge between the minimum wage increase for real wage gains and the maximum increase for competitiveness gains. As argued in chapter 7, the key to Korea's growth has been its very rapid augmentation of both capital and labor.

The second factor has been the determination of wages. Weak unions and worker organizations have had a negligible effect on wage adjustments. Instead, Korean wages seemed to adjust relatively quickly to changing market conditions throughout the 1970s. The lack of wage indexation has removed some of the inertia in wage adjustment frequently seen in Latin American countries. Additional flexibility is introduced by the system of compensation in which a substantial share of worker compensation is in the form of bonus payments, which can be reduced during downturns. In some respects, Korea workers with their growing real wages have fared well under

this system. The costs, which come in terms of limited influence over worker rights and work conditions, are very difficult to quantify.

A final point worth stressing is that tradeoffs between real incomes and competitiveness are only avoided once the investment-productivity gain cycle gets going. Korea cut real wages to give an initial boost and to get the "engine" moving both in the early 1960s and during adjustments in 1980–81.

11 Fiscal and Monetary Policy

In this chapter we assess the role of fiscal and monetary policy in Korea's experience with external debt. One important issue is the financing of fiscal deficits. Did the government borrow heavily from abroad or rapidly expand the domestic money supply in order to finance large budget deficits? Both factors figured prominently in the experience of many Latin American debtor countries, however, both turn out to play much smaller parts for Korea. Still they are of interest precisely because they highlight some of the aspects which distinguish Korea's debt history from the history of many other countries which have had less successful recoveries.

A second issue is the role of fiscal and monetary policies in achieving the phenomenal growth rates which have enabled Korea to service very large external debts. To summarize our conclusions at the outset, we argue that fiscal policies have been used countercyclically, but that they were not the predominant explanation for rapid growth. Monetary policies, on the other hand, have played a central role, although not through excessive inflation finance because the allocation of domestic credit has been a centerpiece in the government's industrial policies which have successfully targeted high-growth export industries.

11.1 Brief History

An overview of the development of Korea's financial and fiscal sectors provides a useful base for examining the current systems.[1] The key issues of the linkages between government finances, monetary policy, and external borrowing are not new, but emerged at the outset as Korea recovered first from World War II and then from the Korean War.

The developments through the early 1970s can be divided into three stages. In the early stage, prior to 1945, Korea enjoyed a very highly developed financial system run by the Japanese to mobilize resources for the colonial expansion and later to help finance military spending. The system