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LABOR MARKET REFORMS AS A SOURCE OF THE RECENT ITALIAN PUZZLE

Abstract

In this paper we investigate some changes in the Italian economy over the last two decades. Stylized facts show a marked decrease in the unemployment rate starting from the end of the Nineties, and, at the same time, a significant increase in the firms' market power. Moreover, notwithstanding the decreasing unemployment rate, the real wage has grown less than labor productivity. The institutional reforms of the Italian labor market have mostly influenced recent performance of the Italian economy since they are able to conciliate the increase in mark-up, the decrease in the unemployment rate and the difference in the growth rate between labor productivity and real wage. Using a simple macroeconomic model, we show that the observed decrease in both unemployment and real wage can be explained by the fact that labor market reforms have been proportionally more incisive than the increase in the firms' market power.

Key words:

Labor market flexibility, firms' market power, unemployment, wages.

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1. Introduction

This paper aims to provide an explanation of some recent evidence that has emerged in the Italian economy. In particular, we focus on the contradictory performance characterizing the labor and the goods markets. The former has shown a marked decrease in the unemployment rate, the latter a significant increase in the firms' mark-up, that is an increase in the firms' profit. The occurrence of these events at the same time is not easy to explain, since macroeconomic theory suggests that when mark-up increases, the firms' labor demand should decrease, and should then generate a higher equilibrium unemployment rate.

Moreover, notwithstanding the lower unemployment rate, the real wage has grown less than the labor productivity. Such evidence represents another puzzle since the unemployment rate is an important element in the wage setting process that should negatively affect workers' wage claim.

These points suggest that a structural change has occurred in the Italian economy. We consider the institutional reforms of the Italian labor market as the elements that have mostly influenced recent performance of the Italian economy and that are able to conciliate the increase in the mark-up, the decrease in the unemployment rate and the difference in the growth rate between productivity and real wage.

Empirical studies have shown that labor market rigidities such as employment protection legislation (EPL), wage setting rules and fiscal setting affect labor market variables other than unemployment rate and wage level [2; 3]. However, the literature studying the interactions between labor and goods markets lacks contributions relating such labor market variables to economic activity.

From a theoretical standpoint, search and matching models explain the relationship between firing costs, job and worker flows, labor market tightness, unemployment duration and wage level [15; 16; 20]. This fits well with the empirical evidence. In particular, the relationship between employment protection legislation and unemployment rates is ambiguous, while flows and unemployment duration seem to be unambiguously affected by the degree of EPL [5; 18; 19], although the direction of the relationship does not appear to be clear-cut [22].

In a general equilibrium framework, Hopenhayn and Rogerson (1993) analyzed the effects of labor rigidities on the decision rule that, in a stationary equilibrium, firms follow in order to decide: (i) to expand or to contract their own employment level; (ii) to exit, if they are incumbent, or to enter, if they are poten-

tial entrants, the product market. They conclude that higher rigidities imply high welfare costs deriving from inefficient behavior of the firms and possibly lower total long run equilibrium employment

A further stream of literature relates labor market institutions to the degree of product market competition [8; 12; 13; 14; 21; 23].

In this paper we investigate some changes in the Italian economy during the last two decades. Stylized facts show a marked decrease in the unemployment rate starting from the end of the Nineties, a significant increase in the firms' market power and a real wage growth lower than labor productivity growth. Using a simple macroeconomic model, we show that the observed decrease in both unemployment and real wage can be explained by the fact that labor market reforms have been proportionally more incisive than those occurred in the goods market.

The paper is organized as follows. Section 2 analyzes selected performances of the labor and the goods market and briefly describes the recent institutional reforms in the labor market. Section 3 presents a macroeconomic model with imperfect competition on both labor and goods markets. In Section 4 we use that model to interpret the stylized facts described in section 2. Section 5 concludes.

2. Some recent characteristics
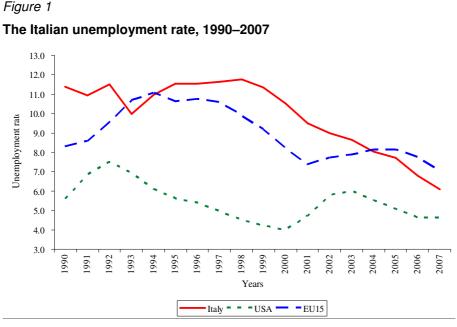# of the Italian economy

In this section we provide some evidence concerning the Italian labor and goods markets, with reference to the last two decades. Firstly, we focus on data concerning recent trend in the unemployment rate, the real wages and the mark-up. We then describe the major reforms that have affected the institutional setting of the Italian labor market.

2.1. Labor and goods markets:
a brief look at the data

As from the early Nineties, two phases can be distinguished in the behavior of the Italian unemployment rate. Figure 1 shows that in the period from 1990 to 1998 the unemployment rate floated around 11%. Then, from 1999 to 2007 it was continuously decreasing. This decrease was particularly striking even if compared with performance in other countries. For example, the US unemployment rate was almost constant around 5.5% while EU 15 has shown a significant reduction but lower than Italy. So, it is possible to interpret such recent

changes in the Italian unemployment rate not only as a consequence of cyclical fluctuations but as a shift towards a lower steady state value.
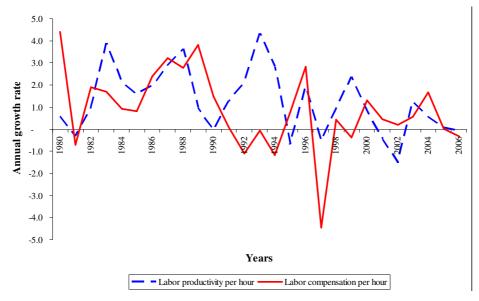

Figure 1

The Italian unemployment rate, 1990–2007

Sources: OECD online database, http://stats.oecd.org/Index.aspx?querytype.

Another important piece of evidence concerns the behavior of the real wage and the labor productivity. Figure 2 shows the annual growth rates of the labor productivity per hour and of the real compensation per hour, from 1990 to 2007.[1] Both variables assume lower and sometimes negative values in the last part of the time period considered. Moreover, it is important to note that during the first part of the same time period, compensations grew in line with productivity, while during the second half they grew more slowly than productivity. The mean value of the difference between the compensation growth rate and the productivity growth rate is null (+0.01%) for the period 1980–1992, while it is equal to – 0.71% during the period 1993–2006. This is associated with a marked fall in the labor share in income distribution, as shown in figure 3 (from 76.7% in 1990 to 67.2% in 2007).

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[1] The following results do not change significantly if the same variables are taken per employee.
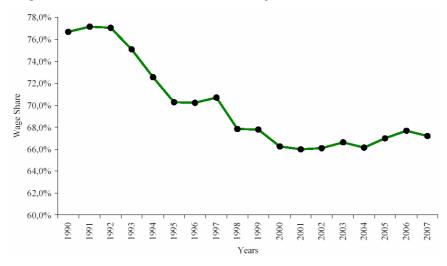
Figure 2

Labor productivity and compensation in Italy 1990–2007

Sources: Authors' calculation using OECD time series data,
http://stats.oecd.org/Index.aspx?querytype.

Figure 3

Wage share in income distribution in Italy 1990–2007

Sources: OECD online database, http://stats.oecd.org/Index.aspx?querytype.

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What about the goods market? An index of the competition level in a market is given by the mark-up, which measures the «distance» between the cost of production and the price of a commodity.

The time series of the mark-up is reported in figure 4. It has been calculated as the ratio between the general price level and the labor cost per unit of output, given the assumption that firms set prices by charging a percentage on the labor cost per unit of output. Formally, the firms' price can be defined as $P = (1 + \mu)LC$, , where P is the gen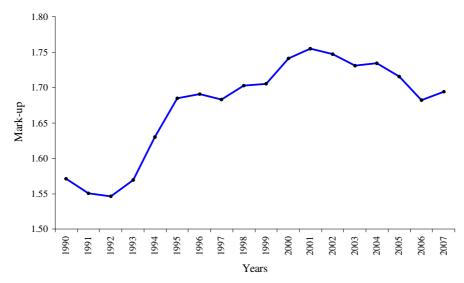eral price level and LC is the labor cost per unit of output. The value of the mark-up is therefore $1 + \mu = \dfrac{P}{LC}$.

Figure 4 shows that in Italy the mark-up has shifted towards higher levels moving from about 1.55 in 1992 to 1.75 in 2001 and 1.69 in 2007.

The evolution of the mark-up over the last twenty years is one of the most interesting stylized facts that has characterized the Italian economy. Its relevant growth may seem surprising since the participation in the euro area in 2002 should have increased the degree of competition in the European goods markets.

Figure 4.

The Italian aggregate mark-up 1990–2007

Sources: Authors' calculation on ISTAT (2007, 2009)

Indeed, if we look at figure 4, we can see that after 2002 the mark-up shows a decreasing trend, although it remains significantly high. It grew during the period from 1992 to 2001, when the European economies were in downturn and Italy was affected by a currency crisis.

To understand these facts, we have also to consider the delay in the adoption of appropriate liberalization policies and the reforms of the late Nineties towards a more flexible labor market. As a consequence, the delay in the realization of competition policies (and the lack of appropriate controls on price making after the introduction of the euro) has prevented the reduction in the general price level, while a more flexible labor market has decreased the labor costs per unit of output. Hence, firms have been able to increase the gap between the price level and the labor costs per unit of output.

Liberalization policies in the goods market, implemented in Italy during the last few years, have not been enough effective to obtain a significant reduction in the mark-up value.

2.2. Labor market institutional changes

Starting from the late Nineties the institutional structure of the Italian labor market has changed significantly. The changes have occurred mainly in the wage bargaining setup and in the regulation concerning the use of fixed term contracts.

Before 1993 wages were almost automatically indexed to price level (*scala mobile*) and two wage bargaining processes occurred at two different levels, industry and firm, with no coordination. In July 1993, government, the most representative labor unions and firm unions signed the Income Policy Agreement (IPA) which stated: *i)* annulment of the automatic price indexation of wages; *ii)* wages should be set according to the targeted rate of inflation and not to the actual rate, aiming to moderate inflationary pressure; *iii)* the industry-wide national level of bargaining should be devoted to defending the purchasing power of wages, while the decentralized level of bargaining should be devoted to linking wages to local and firms' economic conditions. One of the explicit aims of this agreement was to grant the curb of wage at the national level, delegating to the decentralized level of bargaining process the task of redistributing productivity gains.

The other important institutional change concerns deregulation of the labor market, brought in with two important reforms in 1997 and 2003 (which take the names of their promoters, respectively Treu and Biagi). Since 1997 there has been liberalization of fixed term contracts and other flexible contractual forms have been introduced.

In labor economics the employment protection legislation index is widely used as a proxy of the limits and difficulties that a firm faces when it wants to hire or fire workers. This index is built taking into account all the legislative and administrative procedures and limits that have to be observed at the beginning and end of a working relationship. Thus we refer to variation in the index for the Italian labor market as a measure of the impact of such reforms.

Table 1.

Total EPL index in some OECD countries

1990		1998		2003	
United States	0.2	United States	0.2	United States	0.2
United Kingdom	0.6	United Kingdom	0.6	United Kingdom	0.7
Canada	0.8	Canada	0.8	Canada	0.8
Ireland	0.9	Ireland	0.9	Ireland	1.1
Australia	0.9	Switzerland	1.1	Switzerland	1.1
Switzerland	1.1	Australia	1.2	Australia	1.2
Japan	2.1	Denmark	1.4	Denmark	1.4
Austria	2.2	Japan	2.0	Japan	1.8
Denmark	2.3	Finland	2.1	Austria	1.9
Finland	2.3	Netherlands	2.1	**Italy**	**1.9**
France	2.7	Belgium	2.2	Finland	2.0
Netherlands	2.7	Austria	2.2	Netherlands	2.1
Norway	2.9	Sweden	2.2	Belgium	2.2
Belgium	3.2	Germany	2.5	Germany	2.2
Germany	3.2	Norway	2.7	Sweden	2.2
Sweden	3.5	**Italy**	**2.7**	Norway	2.6
Italy	**3.6**	Spain	2.9	Greece	2.8
Greece	3.6	France	3.0	France	3.0
Spain	3.8	Greece	3.5	Spain	3.1
Portugal	4.1	Portugal	3.7	Portugal	3.5

Sources: OECD online database, http://stats.oecd.org/Index.aspx?querytype.

The EPL index is composed of three sub-indices: i) *permanent employment regulation* index, which refers to the cost of firing a worker on a permanent contract; ii) *temporary employment regulation*, which quantifies the limits related to the hiring of a worker on an atypical contract; iii) regulation of *collective dismissals*, which again refers to the firms' firing costs, but when the redundancies concern a significant number of workers. As previously highlighted, recent re-

forms of the Italian labor market have mostly concerned the regulation of temporary contracts.

Table 1 shows how the EPL index has changed in Italy (and also in other OECD countries) and table 2 shows the variation of each sub-index from 1990 to 2003.

The tables confirm that the stringency of the EPL has decreased in Italy (from 3.6 to 1.9) and that this change is due exclusively to the different legislation concerning the use of fixed term contracts. This reduction is the highest among the twenty OECD members selected.

Table 2.

Change in EPL index in some OECD countries – 1990–2003

Permanent contract		Temporary contract		Collective dismissal	
Australia	0.5	Australia	0.0	Australia	0.0
Austria	–0.6	Austria	0.0	Austria	0.0
Belgium	0.1	Belgium	–2.0	Belgium	0.0
Canada	0.0	Canada	0.0	Canada	0.0
Denmark	–0.1	Denmark	–1.8	Denmark	0.0
Finland	–0.6	Finland	0.0	Finland	0.0
France	0.1	France	0.6	France	0.0
Germany	0.1	Germany	–2.0	Germany	0.3
Greece	–0.1	Greece	–1.5	Greece	0.0
Ireland	0.0	Ireland	0.4	Ireland	0.0
Italy	**0.0**	**Italy**	**–3.3**	**Italy**	**0.0**
Japan	0.1	Japan	–0.6	Japan	0.0
Netherlands	0.0	Netherlands	–1.2	Netherlands	0.0
Norway	0.0	Norway	–0.7	Norway	0.0
Portugal	–0.7	Portugal	–0.6	Portugal	0.0
Spain	–1.3	Spain	–0.3	Spain	0.0
Sweden	–0.1	Sweden	–2.5	Sweden	0.0
Switzerland	0.0	Switzerland	0.0	Switzerland	0.0
United Kingdom	0.2	United Kingdom	0.1	United Kingdom	0.0
United States	0.0	United States	0.0	United States	0.0

Sources: OECD online database, http://stats.oecd.org/Index.aspx?querytype.

3. A Simple Model

In order to interpret the data and the institutional changes reported in the previous section, let us represent the Italian economy using a standard macroeconomic model characterized by imperfect competition in the labor and goods markets. According to the approach suggested by Blanchard and Giavazzi (2003), we assume that the aggregate equilibrium is determined by the price setting function and the wage setting function. This stylized framework will be used to explain the recent performance of the Italian economy.

3.1. The Wage Setting Function

The wage setting function, or wage curve, is a downward-sloping relationship between the real wage and the unemployment rate[2]. We assume that the unemployment rate plays a role of threat for the workers' wage claim. When unemployment is high, if the employed workers claim high wages, they could be easily replaced by the unemployed. At the same time, when for the unemployed workers is difficult to find a job, they are willing to accept a job opportunity at lower wages. In other words, high unemployment creates a competition among the workers, leading to a wage moderation. The opposite occurs when unemployment is low[3].

We elicit the wage curve as:

$$\frac{W}{P} = B + aZ - bU \qquad (1)$$

Equation (1) represents the wage claimed by the workers on the supply side of the labor market, where W and P are respectively the nominal wage and the price level, B is the value of leisure or the unemployment benefit, Z is the labor productivity and U is the unemployment rate. a measures the sensitivity of the real wage to labor productivity and summarizes the institutional characteristics of the labor market, such as employment protection legislation and the role

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[2] In this paper it is not necessary to deepen the debate about the slope of the wage curve and how it varies among countries and among different workers. For our aims, it is sufficient to refer to the wide literature that states the existence of a negative relationship between wages and unemployment including for Italy. For example, a recent study of Devicienti et al. (2008), has estimated for the post-1993 period the elasticity of total wage to unemployment around – 0.016 and the elasticity of the part of wages set at local level equal to – 0.042.

[3] From a theoretical point of view such relationship substitutes the standard labor supply function that emerges from the representative agent's choice between consumption and leisure.

and strength of the labor unions[4]. b is the sensitivity of the real wage to the unemployment rate and measures the incidence of labor market conditions on the real wage.

3.2. The price setting function

We have seen that the wage setting function identifies a negative relationship between the wage rate and the unemployment rate. In order to determine the equilibrium unemployment it is necessary to introduce another condition. We consider the firms' labor demand function, which describes how many workers firms are willing to hire according to the economic conditions. For our aims, it is sufficient to consider the real wage, the labor productivity and the firms' mark-up, μ. The latter is a measure of the firms' market power and can be interpreted as a measure of the effective level of competition in the goods market.

We assume a simple constant returns to scale production function $Y = ZN$, so that the unit labor cost is W/Z. Moreover, firms charge a mark-up, so that the unit revenue exceeds the unit cost.[5] Precisely:

$$p = (1+\mu)\frac{W}{Z} \qquad (2)$$

With this relationship we can determine the real wage that firms are willing to pay:

$$\frac{W}{P} = \frac{Z}{1+\mu} \qquad (3)$$

Equation (3) indicates that the real wage depends positively on labor productivity and negatively on mark-up.

Since we have assumed only one productivity factor and constant returns to scale, it follows that prices do not depend on employment (unemployment).[6]

Note that the mark-up μ is an exogenous variable of the model. In the next section, we will use this parameter for some comparative statics that, according to the stylized facts described in section 2, can account for the changes of the unemployment rate and the real wage.

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[4] Recent literature explains the linkages between real wages and firms' performance, as productivity, also as a consequence of fairness and reciprocity in the relationship between employers and employees. See Danthine and Kurmann (2008) and Addessi and Busato (2009).
[5] This way to represent the price setting function is consistent with the methodology we have used in section 2.1 to estimate the mark-up.
[6] Assuming decreasing returns to scale production function would determine a positive relationship between the real wage and the unemployment rate. Anyway, this does not modify the results obtained with constant return to scale.
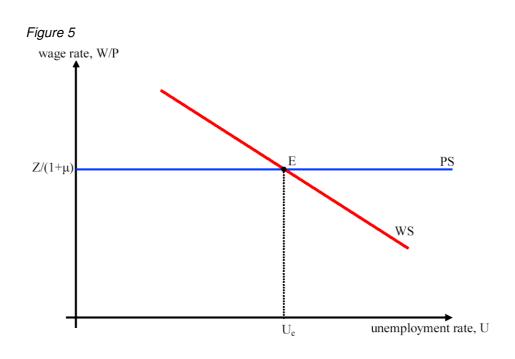
3.3. Equilibrium

It is possible to identify the equilibrium unemployment by combining the wage setting curve and the price setting curve. Let us represent both equations in space (*U, W/P*).

Equation (1) imposes a negative relationship between the wage rate and the unemployment rate, so the wage curve is represented as a decreasing function in space (*U, W/P*).

Equation (3) states the real wage that firms are willing to pay. In this stylized economy, both the marginal productivity of labor and the mark-up do not depend on employment. It follows that equation (3) can be represented as a horizontal line in space (*U, W/P*) with the intercept on the real wage axis equal to ratio $Z / (1 + \mu)$.

It is possible to determine the equilibrium unemployment rate by combining the previous conditions. In figure 5 point *E* represents the equilibrium allocation (U_e and ($W/P)_e$). At this allocation the wage that firms are willing to pay is equal to that emerging from the wage setting.

Figure 5

$$U^* = \frac{\left[B + aZ - \dfrac{Z}{1+\mu} \right]}{b} \tag{4}$$

Equation (4) states that the equilibrium unemployment rate is increasing in B, a and μ, while it is decreasing in b. The effect of productivity Z depends on the sign of $a - 1/(1 + \mu)$.

4. An explanation of some recent stylized facts of the Italian economy

As highlighted in section 2 three important stylized facts have characterized the Italian economy in the last few years: *i*) mark-up has increased; *ii*) unemployment has reduced; *iii*) real wages have grown less than productivity, and both have grown very slowly.

We will not try to explain the first evidence, since we take it as an exogenous change. Our theoretical framework is capable of explaining the other two evidence if the institutional changes in the labor market are taken into account.
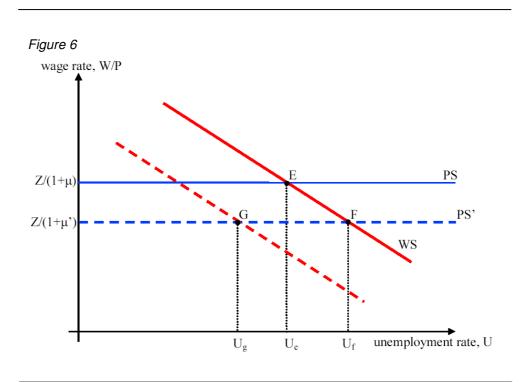
Firstly, consider an increase in the mark-up and analyze the predictions of the model. Figure 6 shows that an increase in μ induces a downward shift of the price setting curve: that is, for each real wage level firms wish to take on fewer workers and, consequently, for each real wage the unemployment rate is higher. For a given wage setting, the new equilibrium allocation is represented by point *F*, characterized by a lower real wage and a higher unemployment rate.

Analytically the effect of the mark-up increase on the unemployment rate and the real wage is given by $\partial U^* / \partial \mu = Z / \left[b(1+\mu)^2 \right] > 0$; and $\partial)W / P) / \partial \mu = -Z / (1+\mu)^2 < 0.$, respectively.

It follows that the increase in the mark-up is able to explain the fall in the real wage but not the decrease in the unemployment rate. So, in order to understand the reduction in the unemployment rate, it is necessary to consider other institutional changes that have characterized the Italian labor market in the last few years. In section 2 we described the reforms in the labor market towards a higher level of flexibility. The main effect of these reforms has been the reduction in the wage claim[7]. Such changes can be summarized in our model as a reduction of parameter *a*, which implies that the wage curve shifts downwards: for each level of unemployment, the wage setting process determines a lower real wage than before.

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[7] This is supported by the evidence concerning the slowdown of real wages with respect to labor productivity.

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After such shift, the equilibrium moves from point *F* to *G*, which represents an allocation characterized by lower unemployment rate and lower real wage than at point *E*.

Figure 6

Analytically, $\partial U^* / \partial a = Z / b > 0$ implies that a reduction in *a* causes a fall in U_e. If the change in both *a* and μ are taken into consideration the variation of the unemployment rate is given by $\Delta U^* = [1/(1+\mu)^2]\Delta\mu + \Delta a$. In order to produce a fall in the unemployment rate it is necessary that:

$$\Delta a < -\left(\frac{1}{(1+\mu)^2}\right)\Delta\mu \qquad (5)$$

We argue that in the last two decades the Italian economy has been characterized by a marked reduction in workers' wage claim, which has overrun the increase in the firms' mark-up.

5. Concluding remarks

In this paper we have investigated some recent changes in the Italian economy. Observation of the macroeconomic data suggests that in the last two decades structural reforms occurred mainly in the labor market, while weak reforms have been made in the goods market, leading to a decrease in the labor income share and to an increase in the gap between the price level and the labor costs per unit of output. Moreover, the implementation of labor market flexibility has entailed first and foremost deregulation of atypical labor contracts, without any significant change for the permanent ones.

We have considered the institutional reforms of the Italian labor market as the elements that have most affected recent performance of the Italian economy, and that are able to conciliate the increase in firms' market power, the decrease in the unemployment rate and the difference in the growth rate between productivity and real wage. Using a simple macroeconomic model, we show that the observed decrease in both unemployment and real wage can be explained by the fact that the labor market reforms have been proportionally more incisive than those occurred in the goods market.

The current debate, both in Italy and in European Union, concerns policy interventions to boost the purchasing power of wages. On the basis of our simple model, the ways to obtain this are essentially two: to create the conditions for a resumption of the productivity growth and to implement liberalization policies in order to increase the degree of competition in the goods market.

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