The assessment of macroeconomic impact of Italy's reforms with a focus on credibility

QUEST Workshop - Brussels 13-14 June 2016

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The external assessment of Italy's structural reforms

Council recommendation on the 2016 National Reform Progamme of Italy

- *Italy can currently be assessed as qualifying for the full requested temporary deviation of 0.5 percentage points of GDP in 2016, provided that it adequately implements the agreed reforms.*

- *The impact of all the reforms on real GDP is estimated by the authorities at 2.2 percentage points by 2020, which seems to be plausible.*
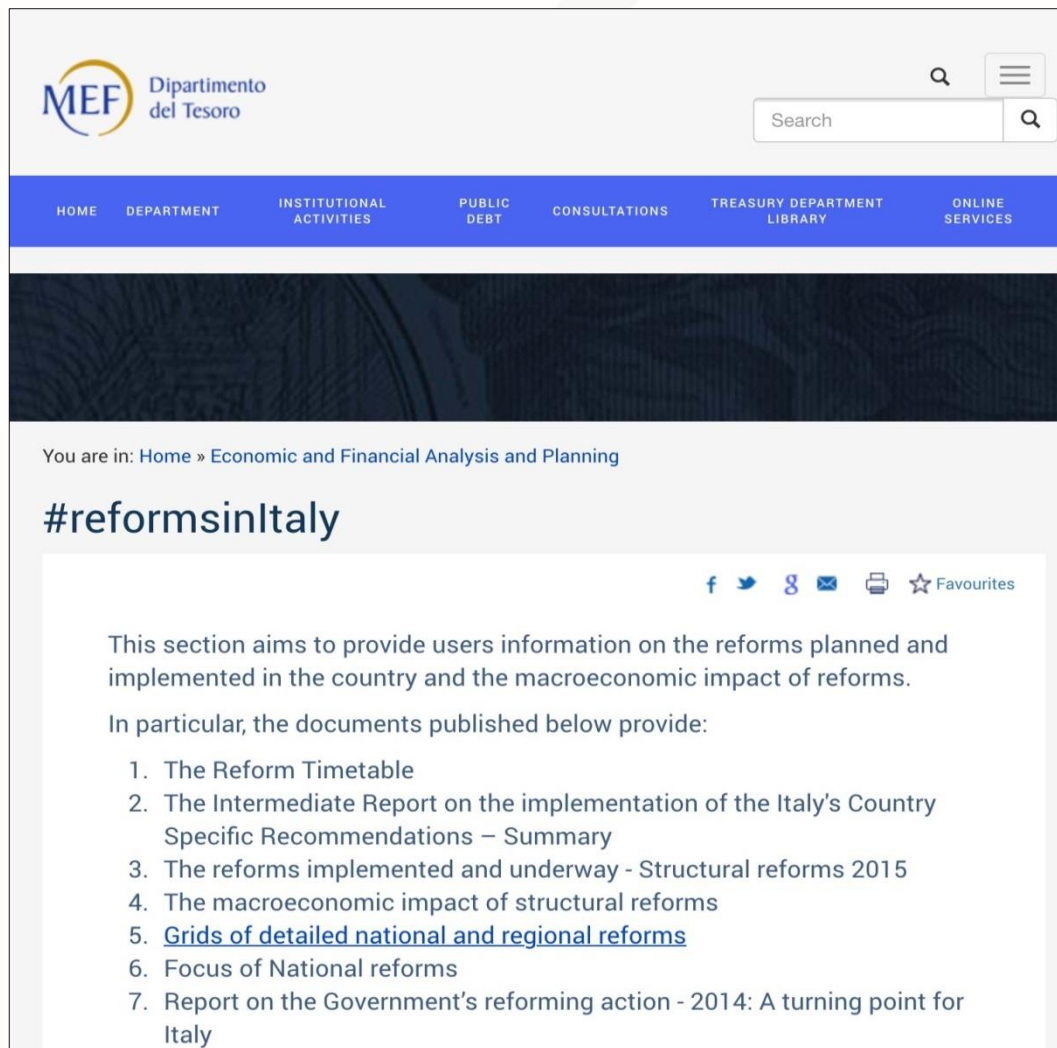
IMF - Italy's Art. IV 2016

- *The government has been pursuing a range of important reforms. The list of reform initiatives has been impressive.*

OECD - Going for Growth, 2016

- *The pace of reforms continues to be generally higher in Southern European countries (in particular Italy…).*

#reformsinItaly

#reformsinItaly

http://www.dt.mef.gov.it/en/attivita_istituzionali/analisi_programmazione_economico_finanziaria/strategia_crescita/index.html

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Our econometric models for structural reforms

- **IGEM**   Italian General Equilibrium Model

- **ITEM**   Italian Treasury Econometric Model

- **ITEM** e **OEF**   Oxford Economic Forecasting

- **MACGEM-IT**   A new CGE model for Italy

- **QUEST III -IT**   Quarterly European Simulation Tool

http://www.dt.tesoro.it/en/attivita_istituzionali/analisi_programmazione_economico_finanziaria/modellistica/index.html

Effects of the interventions eligible for the flexibility clause associated to structural reforms

The expansionary character of these reforms clearly emerges, especially in the medium to long run, with a relevant impact on both consumption and investment.

MACROECONOMIC EFFECTS OF REFORMS *(percentage deviation from the baseline scenario)*			
	2020	**2025**	**Long run**
GDP	2.2	3.4	8.2
Consumption	2.7	4.2	6.3
Investment	3.3	4.8	11.5
Labour	1.5	2.1	3.7

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MACROECONOMIC EFFECTS OF STRUCTURAL REFORMS

IMPACT FOR POLICY AREA (percentage deviation of GDP from baseline scenario)			
	2020	**2025**	**Long run**
Public Administration	0.4	0.7	1.2
Competition	0.4	0.7	1.2
Labour Market	0.6	0.9	1.3
Justice	0.1	0.2	0.9
School System	0.3	0.6	2.4
Tax Shift	0.2	0.2	0.2
Spending Review	-0.2	-0.3	0.0
NPL and insolvency proceedings	0.2	-	-
Finance for growth	0.2	0.4	1.0
TOTAL	**2.2**	**3.4**	**8.2**

Note: MEF estimates. The macroeconomic impact of structural reforms is carried out by focusing on a scenario where only the most recent reforms are considered, namely those eligible for the application of the structural reforms clause recently introduced by the European Commission (flexibility clause scenario, FCS).

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Italy's exercise is coherent with OECD estimates

COMPARING OFFICIAL ESTIMATES (percentage deviation of GDP from baseline scenario)		
	MEF	**OECD**
Public Administration and Justice	0.5	0.6
Competitiveness	0.4	0.5
Labor Market (Jobs Act)	0.6	0.6
Tax wedge	0.3	0.3
TOTAL	**1.8**	**2.0**

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Brussels, 14th June 2016

Model Choice and Mapping

Simulation tool and mapping		
	Tool	**Mapping**
Public Administration	QUEST III	Overhead labour cost
Competition	QUEST III	Price mark-ups
Labour Market	IGEM	Wage mark-ups, changes in the composition of labour force
Justice	QUEST III	Price mark-ups, user cost of capital
School System	QUEST III	Public spending, changes in the skill composition of the labour force
Tax Shift	IGEM	Tax rates, SSC
Spending Review	QUEST III	Tax rates, Public spending
NPL and insolvency proceedings	ITEM	NPL, discount required by investors for NPL; lending rate
Finance for growth	IGEM	Quality of installed capital (to induce an increase in its accumulation)

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Quantitative translation of reform effort

- Quantitative translation of measures – delicate issue.

- No problem for tax shifts and spending review: size set by the policy itself.

- For other areas need of an **external anchor** - possible strategies:

  - **reduce the gap** with best performers

  - **best practice** among reforming countries

  - past **experience** and empirical evidence

  - **economic theory**

  - a **mix** of the above

Public administration and simplification: Quantitative translation of reform effort
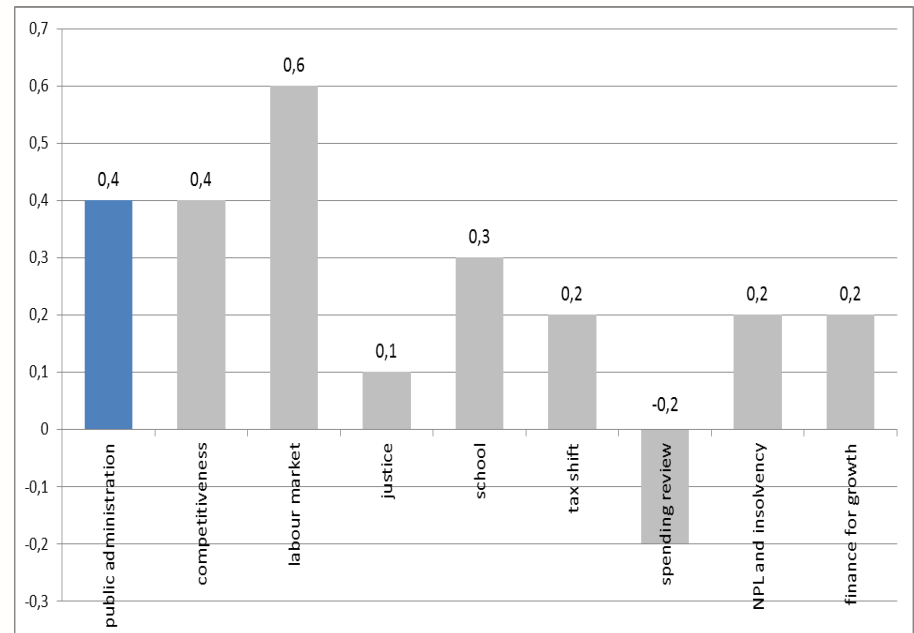
- **Interventions**: reform packages aimed at improving the business environment, through the reduction of the costs related to the regulatory burden and to the time spent in dealing with bureaucracy; digitization and innovation in the PA.

- **Expected effects**: efficiency gains in the use of time spent at work.

- **Mapping**: overhead labour costs – OLC.

- **Size**: size of the reduction of the OLC on the basis of past reform effort by Italy (period 1995-2000) as documented in the work by Griffith and Harrison (2004). On the basis of the analysis of the indicators associated to this specific reform area a 15 per cent reduction in overhead labour costs is considered. An additional 3 per cent reduction of the OLC to be ascribed to digitization and innovation in the Public Administration is considered on the basis of the elasticities estimated by Lorenzani and Varga (2014).

Public administration and simplification

- Overhead labour costs: 18 per cent.
- Timing: Phasing in 10 years.

Quantitative elements				
Main outcome of macroeconomic simulations				
Description	**Yearly and cumulated effect on GDP and other main macroeconomic variables**			
	2020	2025	2030	Long Run
GDP	0.4	0.7	0.8	1.2
Gross capital formation	0.1	0.3	0.3	0.8
Employment	0.0	-0.2	-0.2	-0.1
Consumption	0.7	0.9	0.8	0.9

Impact on GDP by 2020

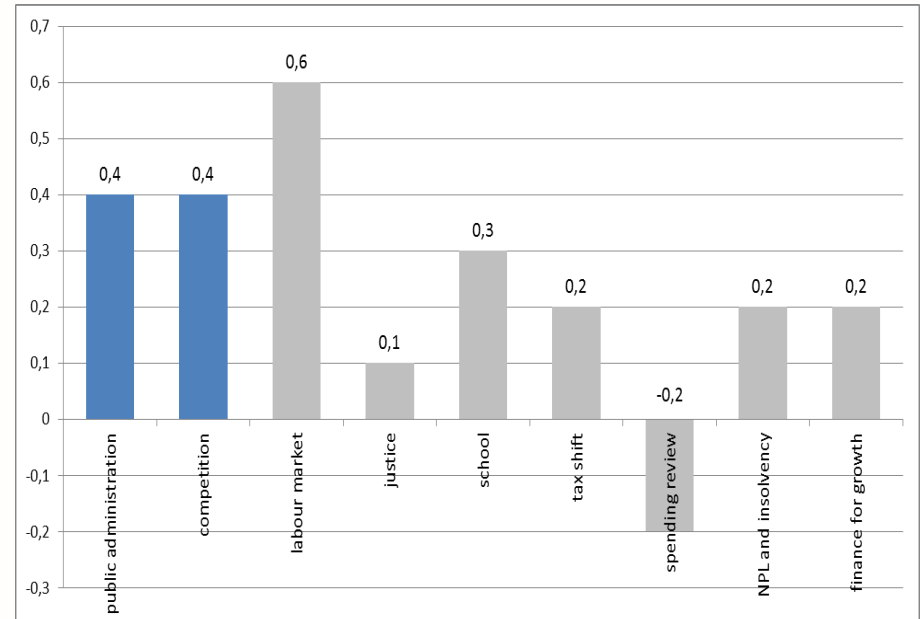# Competition: Quantitative translation of reform effort

- **Interventions**: set of measures aimed at improving the degree of competition in the markets for goods and services (i.e. professional services, services in the public interest, etc.).

- **Expected effects**: lower price markups.

- **Mapping**: in the manufacturing sector and in the services sector.

- **Size**: reform effort determined starting from the reduction of the Product Market Regulation (PMR) index recorded by Italy over the period 1998-2013 in the aftermath of similar reform actions, i.e. 20 per cent. Relying on the estimates by Thum-Thysen and Canton (2015) an average elasticity of the markup of 0.05 is considered. The resulting reduction of the markup mapped onto the model to assess the effects of the provisions in this area is equal to 1 percentage point, obtained as the product of the average reduction of the PMR (20 per cent) and the markup elasticity (0.05).

Competition

- Price mark-up reduction in the manufacturing sector and in the services sector: 1 percentage point.

- Timing: Phasing in 8 years.

Quantitative elements				
Main outcome of macroeconomic simulations				
Description	Yearly and cumulated effect on GDP and other main macroeconomic variables			
	2020	2025	2030	Long Run
GDP	0.4	0.7	0.8	1.2
Gross capital formation	2.0	2.5	2.7	2.9
Employment	0.1	0.1	0.0	0.0
Consumption	-0.3	-0.1	0.0	0.3

Impact on GDP by 2020

Category	Value
public administration	0,4
competition	0,4
labour market	0,6
justice	0,1
school	0,3
tax shift	0,2
spending review	-0,2
NPL and insolvency	0,2
finance for growth	0,2

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Labour market: Quantitative translation of reform effort

- **Interventions**: Job Act: New open-ended contracts, minimum protection floor, revision of the dismissal rules, ALMP, Simplifications, apprenticeship.

- **Expected effects**: enhanced efficiency of the labour market; shift from flexible labour pattern to permanent contracts.

- **Mapping**: wage mark-up, shift from temporary to permanent contracts.

- **Size**: Wage mark-ups change on the basis of empirical findings by Arpaia and Mourre (2012) who analyze the impact on employment of similar labour market reforms implemented in Europe over the period 2001-2006: -14 percentage points over 10 years; 6.5 percentage point gradual shift from temporary to permanent contracts consistent with the gains in labour productivity estimated by Boeri and Garibaldi (2007) associated to shift of labour demand towards more stable types of contracts.

Labour market

- Wage mark-up reduction of 14 percentage points for permanent workers; shift from atypical pattern to permanent contract of 6.5 percentage points.

- Timing: Phasing in 10 years.

Quantitative elements				
Main outcome of macroeconomic simulations				
Description	Yearly and cumulated effect on GDP and other main macroeconomic variables			
	2020	2025	2030	Long Run
GDP	0.6	0.9	1.2	1.3
Gross capital formation	0.4	0.4	0.6	1.0
Employment	1.0	1.5	2.0	2.0
Consumption	0.6	1.3	1.4	1.4

Impact on GDP by 2020
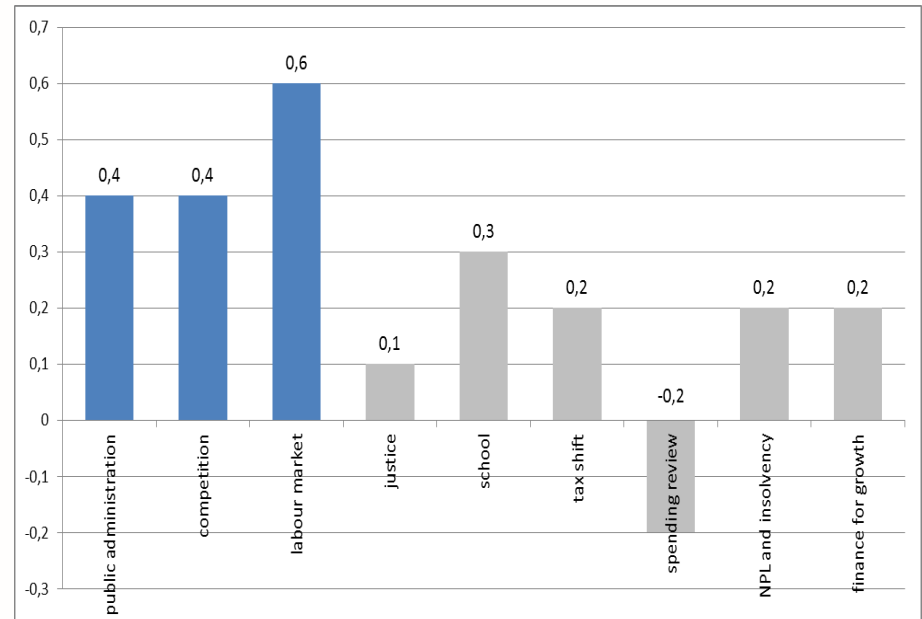
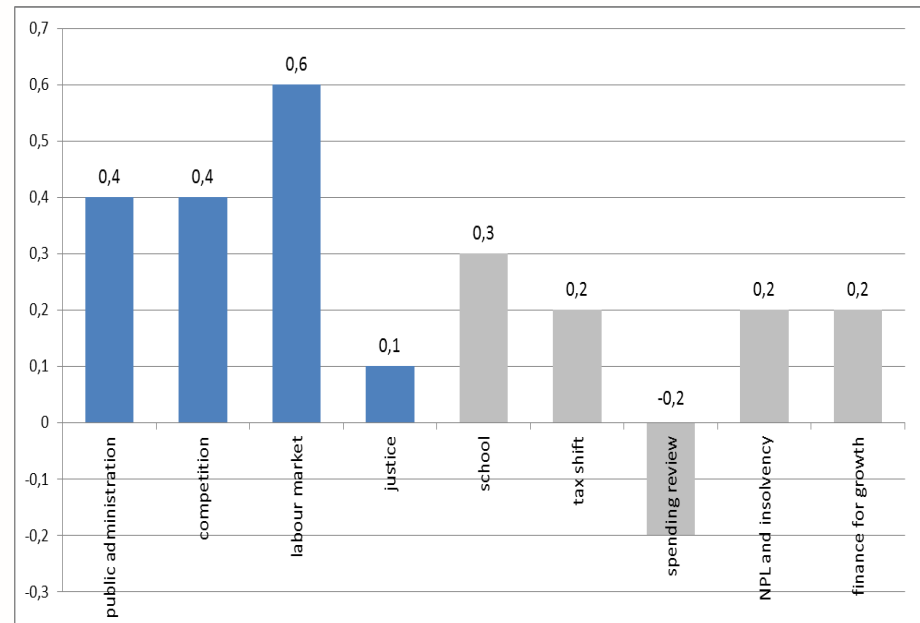# Justice reform: Quantitative translation of reform effort

- **Interventions**: (i) reduction of the total number of first instance courts by 48 per cent; (ii) the reduction of the litigation rate by 2.9 per cent.

- **Expected effects**: enhanced productivity and economic activity level.

- **Mapping**: (i) and (ii) through a panel regression in price markup (due to a larger number of firms in the market) and user cost of capital by 5 basis point.

- **Size**: Change in the mark up has been obtained by modelling in QUEST III the increase in productivity consistent with the rise in the entry rates estimated by the European Commission. In detail, the estimated impact of justice reforms on the entry rate is 2.62 percentage points (i.e. 2.45 percentage points due to geographical reorganization of courts and 0.17 percentage points due to the reform in mediation). Considering the estimate on the relationship between the entry rate and labour productivity (as in Cincera, M., Galgau, O.), it is assumed an increase in average productivity by 0.24 per cent. Also in the model it is assumed a reduction of the user cost of capital so as to generate an increase in total investment.

Justice reform

- Price mark-up reduction in the manufacturing sector and in the services sector: 0.15 percentage point; reduction of user cost of capital of 5 basis points.

- Timing: Phasing in 3 years.

Impact on GDP by 2020

Quantitative elements				
Main outcome of macroeconomic simulations				
Description	Yearly and cumulated effect on GDP and other main macroeconomic variables			
	2020	2025	2030	Long Run
GDP	0.1	0.2	0.3	0.9
Gross capital formation	0.8	0.9	0.9	2.2
Employment	0.0	0.0	0.0	0.2
Consumption	0.0	0.0	0.3	0.8

Impact on GDP by 2020: public administration 0,4; competition 0,4; labour market 0,6; justice 0,1; school 0,3; tax shift 0,2; spending review -0,2; NPL and insolvency 0,2; finance for growth 0,2

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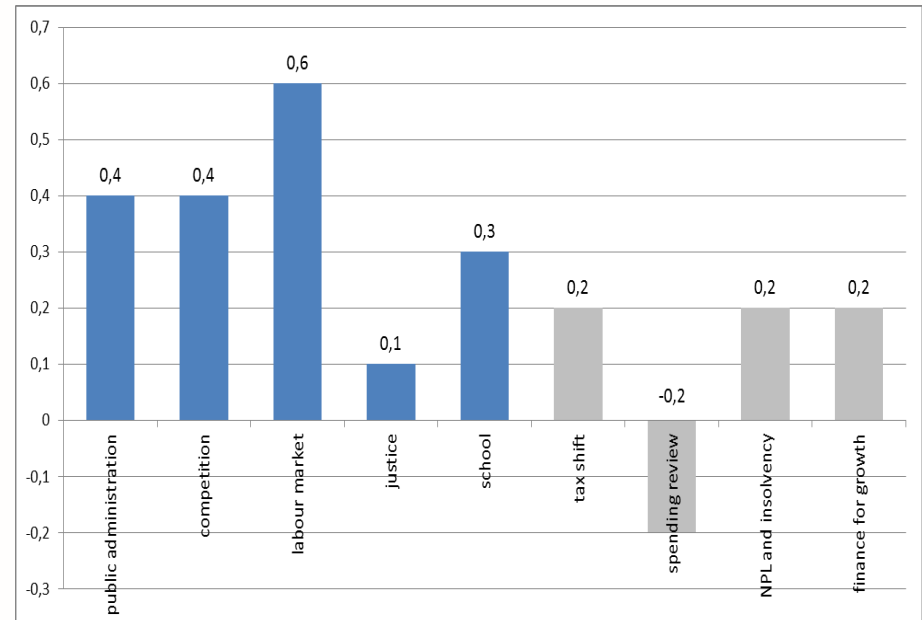# School reform: Quantitative translation of reform effort

- **Interventions**: Introduction of merit-based components for teacher salaries; recruiting; school autonomy; work-based learning; curriculum; digital and language skills.

- **Expected effects**: enhanced quality of the education system and reduction of the drop-out rate.

- **Mapping**: shift in the skill composition, public expenditure.

- **Size**: use data on the annual expenditure per student and assume full achievement of the Europe 2020 target for the drop-out rate: gradual increase in the share of the medium-to-high skilled workers by 4.6 per cent; increase of public expenditure by €1 billion in 2015 and by €3 billion starting from 2016 to cover the higher cost needed to fund stabilization and training of the teaching staff.

School reform

- Shift from low skilled workers to medium skilled workers by 4.6 percentage points.

- Increase of public expenditure by 3 billions.

Impact on GDP by 2020

Quantitative elements			
Main outcome of macroeconomic simulations			
Description	Yearly and cumulated effect on GDP and other main macroeconomic variables		
	2020	2025	2030	Long Run
GDP	0.3	0.6	0.9	2.4
Gross capital formation	-0.5	-0.2	0.3	1.5
Employment	0.2	0.5	0.8	1.1
Consumption	0.4	0.7	1.1	2.1

Chart — Impact on GDP by 2020:
- public administration: 0,4
- competition: 0,4
- labour market: 0,6
- justice: 0,1
- school: 0,3
- tax shift: 0,2
- spending review: -0,2
- NPL and insolvency: 0,2
- finance for growth: 0,2

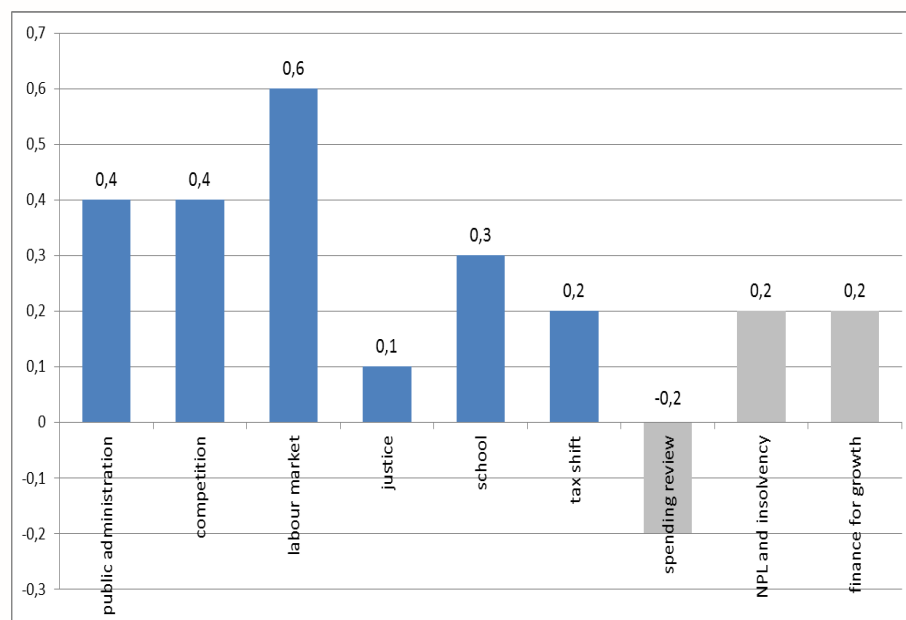# Tax shift: Quantitative translation of reform effort

- **Interventions**: reduce the labour tax wedge; deductibility of labour cost related to permanent workers from the tax base of the Italian regional production tax (IRAP) and related financing.

- **Expected effects**: positive riallocative effects of tax reduction.

- **Mapping**: labour tax, SSC, financial tax income.

- **Size**: Input assessment from law provisions, i.e. reduction of labour tax by 0.6 per cent of GDP; reduction of social contributions paid by businesses by 0.4 per cent of GDP; increase of financial income tax: 0.16 per cent of GDP.

Tax shift

- Reduction of labour tax: 0.6 per cent of GDP.

- Reduction of social contributions paid by businesses: 0.4 per cent of GDP.

- Increase of financial income tax: 0.16 per cent of GDP.

Quantitative elements			
Main outcome of macroeconomic simulations			
Description	Yearly and cumulated effect on GDP and other main macroeconomic variables		
	2020	2025	2030	Long Run
GDP	0.2	0.2	0.2	0.2
Gross capital formation	-0.5	-0.2	-0.2	-0.2
Employment	0.5	0.5	0.5	0.5
Consumption	-0.1	0.0	0.0	0.0

Impact on GDP by 2020

# Spending review and tax expenditures: Quantitative translation of reform effort

- **Interventions**: Improving efficiency of public expenditure and review of tax ex-penditures.

- **Expected effects**: riallocative effects of taxation and demand composition.

- **Mapping**: consumption and labour tax, public expenditure.

- **Size**: Input assessment from law provisions, i.e. increase of consumption tax by 0.075 per cent of GDP; increase of labour tax by 0.075 per cent of GDP; decrease of public expenditure by 0.9 per cent of GDP.

Spending review and tax expenditures

- Increase of consumption tax by 0.075 per cent of GDP.

- Increase of labour tax by 0.075 per cent of GDP.

- Decrease of public expenditure by 0.9 per cent of GDP.

Quantitative elements			
Main outcome of macroeconomic simulations			
Description	Yearly and cumulated effect on GDP and other main macroeconomic variables		
	2020	2025	2030	Long Run
GDP	-0.2	-0.3	-0.3	0.0
Gross capital formation	-0.3	-0.3	-0.3	0.0
Employment	-0.3	-0.3	-0.3	0.0
Consumption	1.1	1.0	0.8	0.0

Impact on GDP by 2020
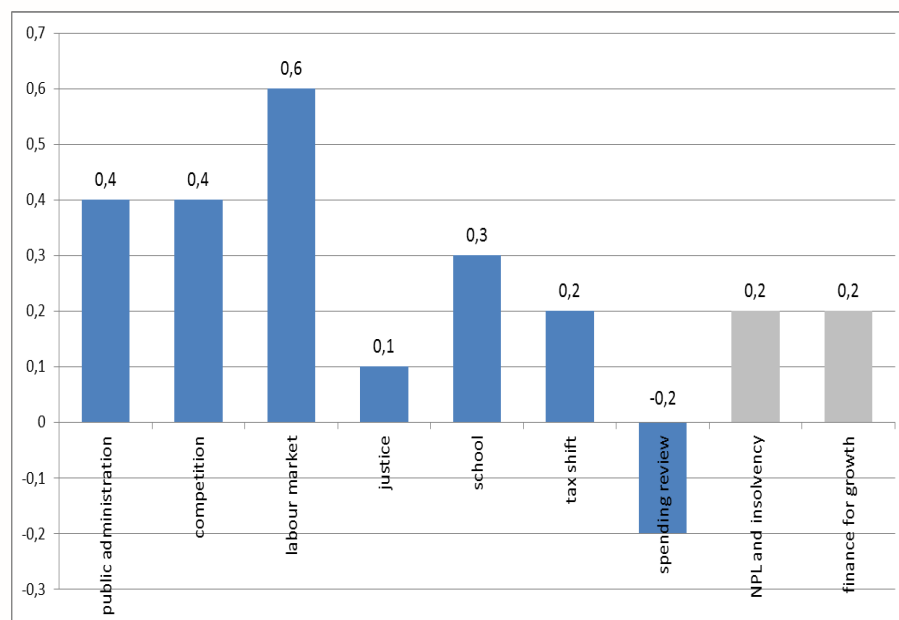
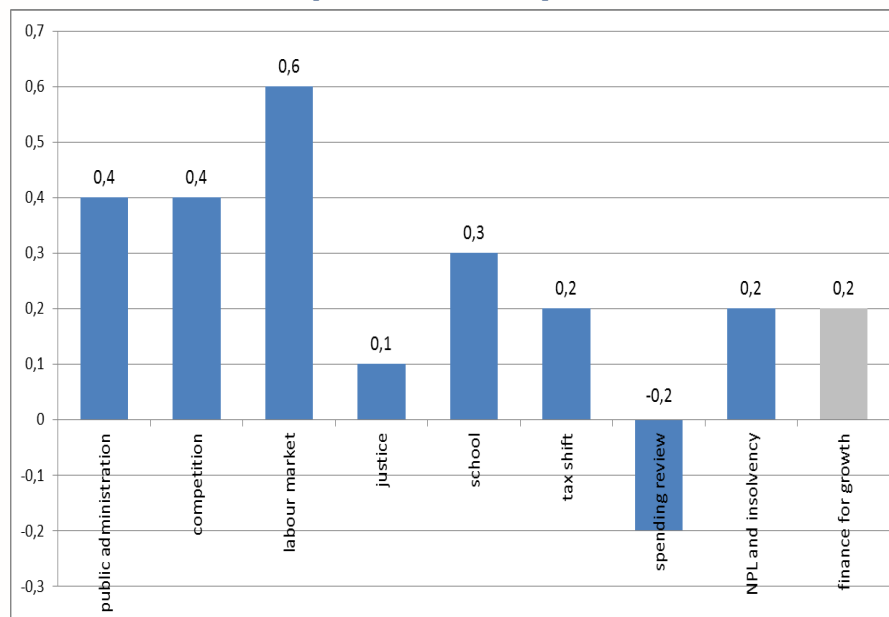# NPL and insolvency: Quantitative translation of reform effort

- **Interventions**: (i) reducing the stock of nonperforming loans (NPL) in the bank balance sheets; (ii) increasing the speed and efficiency of the insolvency and liquidation procedures.

- **Expected effects**: stabilization of the bank system; enhanced efficiency of the judicial procedures for debt recovery.

- **Mapping**: reduction of the discount that investors; the discount that investors require for purchasing the nonperforming loans; bank lending rate.

- **Size**: assumed increase in the amount of disposed NPLs as a fraction of its overall stock (in net value) by 10 percentage points (from 5 to 15 per cent); increase in the incidence of disposed NPLs reaching 30 per cent in 2019. Assumed reduction by 10 basis point of the bank lending rate with respect to the baseline scenario up to 2019.

NPL and insolvency procedures

- Increase of the share of sold or securitized nonperforming loans from 5% to 30% (over a five year horizon) temporary measure.

- Reduction of the discount that investors require for purchasing the nonperforming loans from 50% to 30% (over a five year horizon).

- Reduction by 10 basis point of the bank lending rate up to 2019.

Quantitative elements			
Main outcome of macroeconomic simulations			
Description	Yearly and cumulated effect on GDP and other main macroeconomic variables		
	2020	2025	2030	Long Run
GDP	0.2	-	-	-
Gross capital formation	0.7	-	-	-
Employment	0.0	-	-	-
Consumption	0.2	-	-	-

Impact on GDP by 2020

	Impact on GDP by 2020
public administration	0,4
competition	0,4
labour market	0,6
justice	0,1
school	0,3
tax shift	0,2
spending review	-0,2
NPL and insolvency	0,2
finance for growth	0,2

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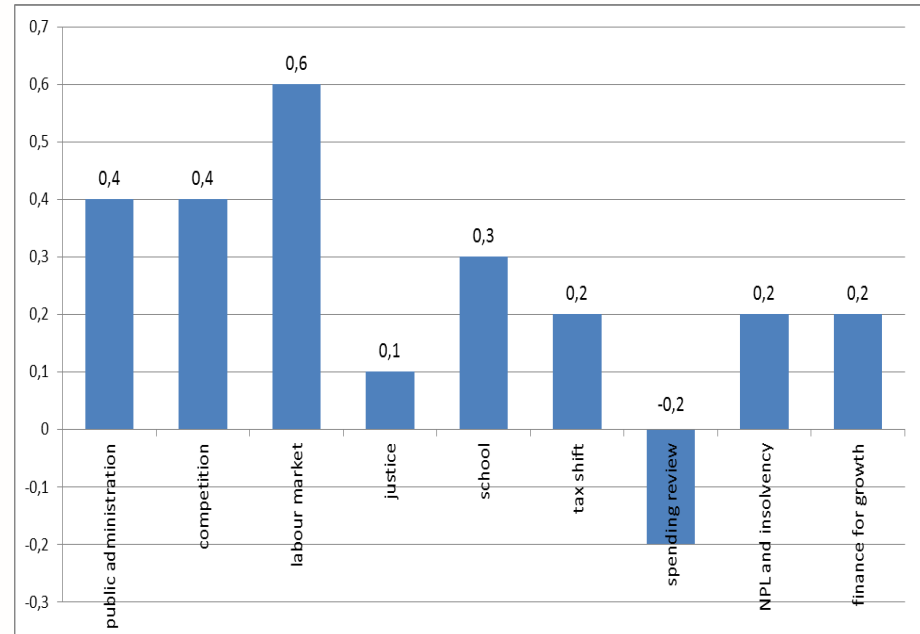# Finance for growth: Quantitative translation of reform effort

- **Interventions**: broadening the variety of financial sources for businesses; reduction of credit market rigidities.

- **Expected effects**: enhanced conditions of access to credit will result in a greater willingness of companies to invest.

- **Mapping**: quality of installed capital.

- **Size**: estimated impact of the increase in the flow of credit on investment, equal to 0.144 (European Commission 2014b). Assume that the full implementation of reforms over a period of 10 years gives rise to an increase in the flow of loans to enterprises up to 10 percent, implying a change in investments equal to 1.4 percent. In IGEM increase in investment achieved through an increase in the growth rate of physical capital by 0.07 per cent in 4 years.

Finance for growth

- Increase in the growth rate of physical capital by 0.07 per cent in four years.
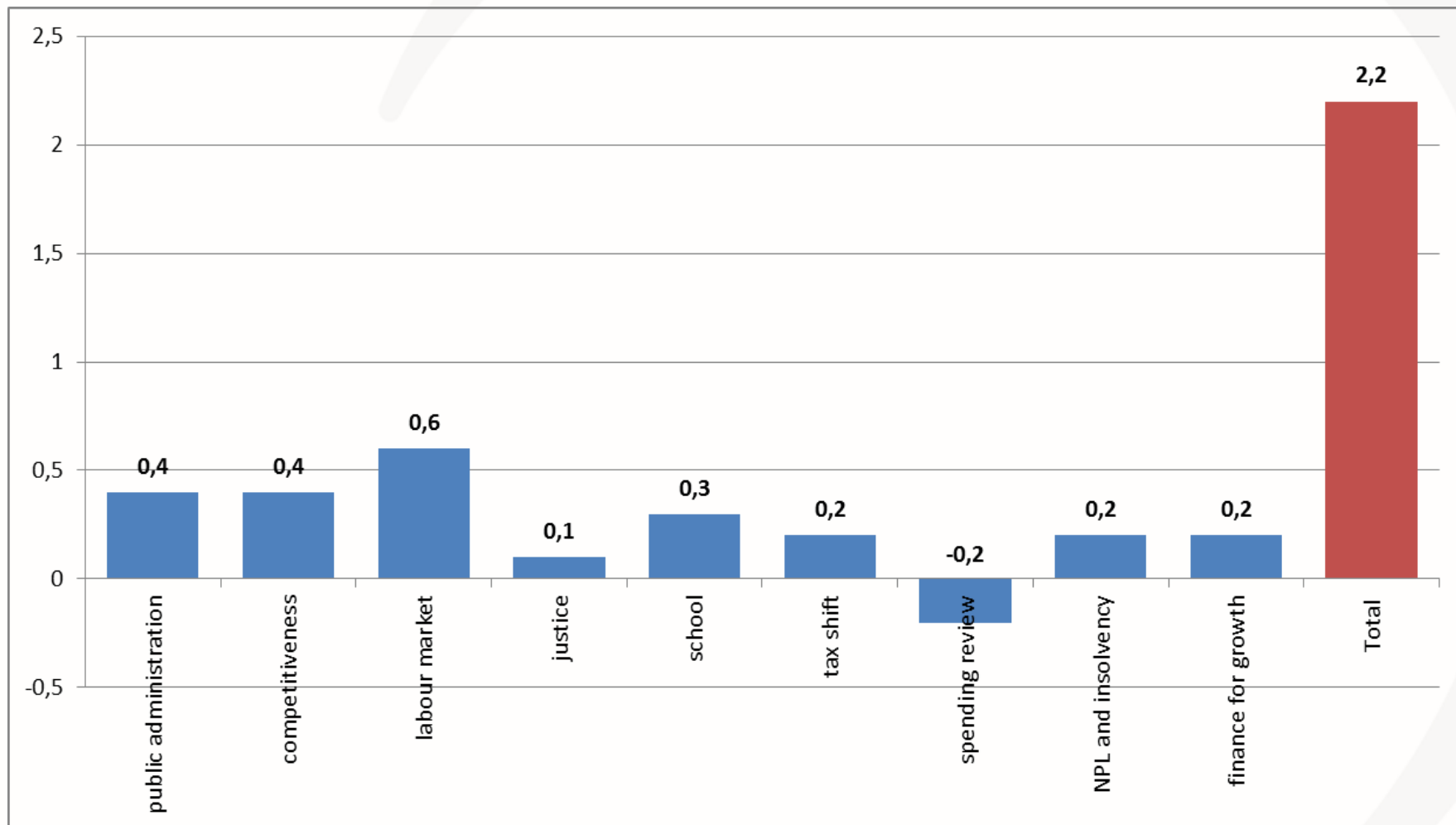
Quantitative elements			
Main outcome of macroeconomic simulations			
Description	Yearly and cumulated effect on GDP and other main macroeconomic variables		
	2020	2025	2030	Long Run
GDP	0.2	0.4	0.6	1.0
Gross capital formation	0.6	1.4	2.2	3.3
Employment	0.0	0.0	0.0	0.0
Consumption	0.1	0.4	0.5	0.8

Impact on GDP by 2020

Total impact on GDP by 2020
(percentage deviation of GDP with respect to the baseline scenario)

| Category	Value
public administration	0,4
competitiveness	0,4
labour market	0,6
justice	0,1
school	0,3
tax shift	0,2
spending review	-0,2
NPL and insolvency	0,2
finance for growth	0,2
Total	2,2

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Total impact on GDP by 2020 – 2025 and long run
(percentage deviation of GDP with respect to the baseline scenario)
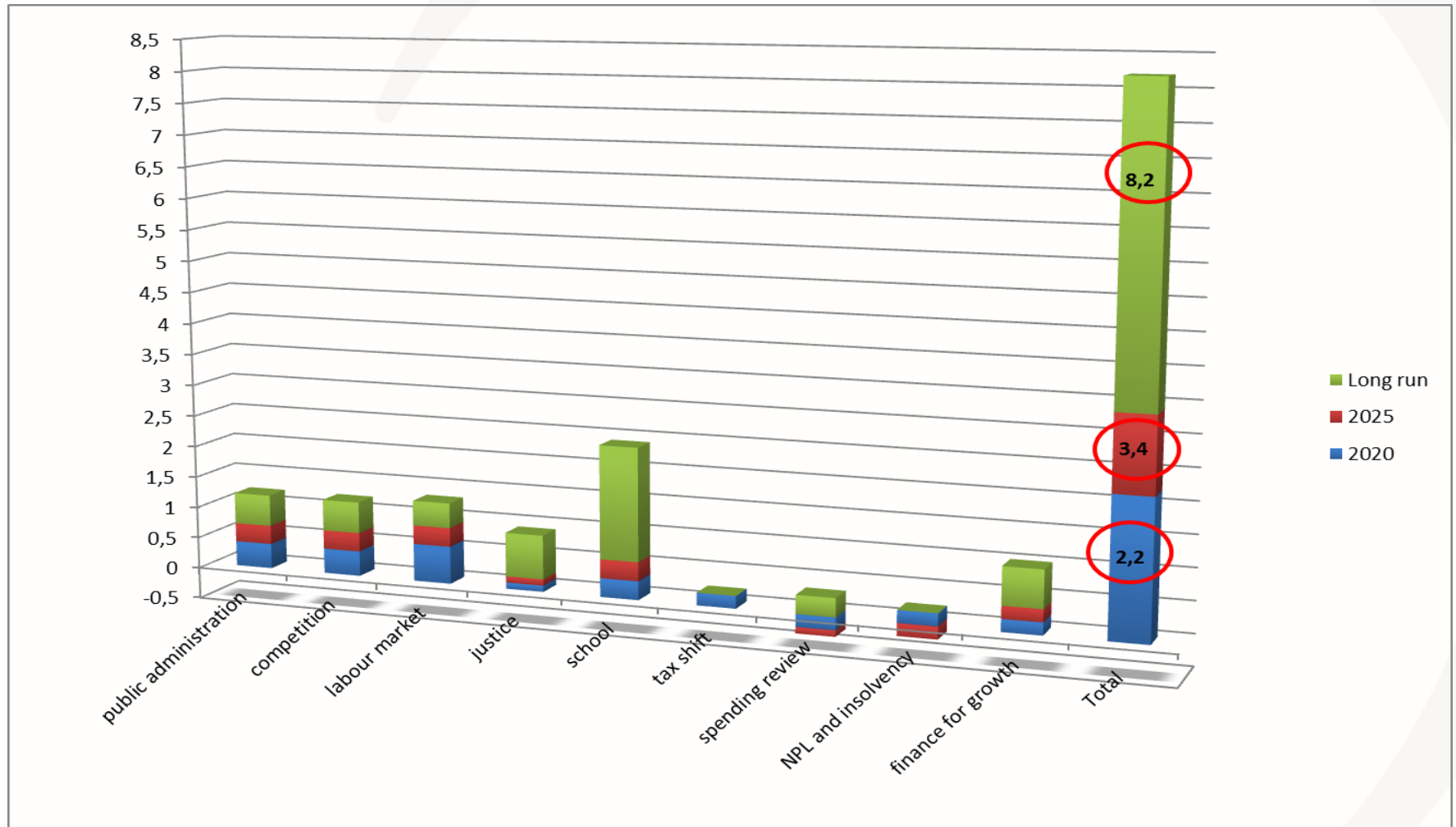
Total impact on consumption, investment, labour (2020 – 2025 and long run)
(percentage deviation from baseline scenario)
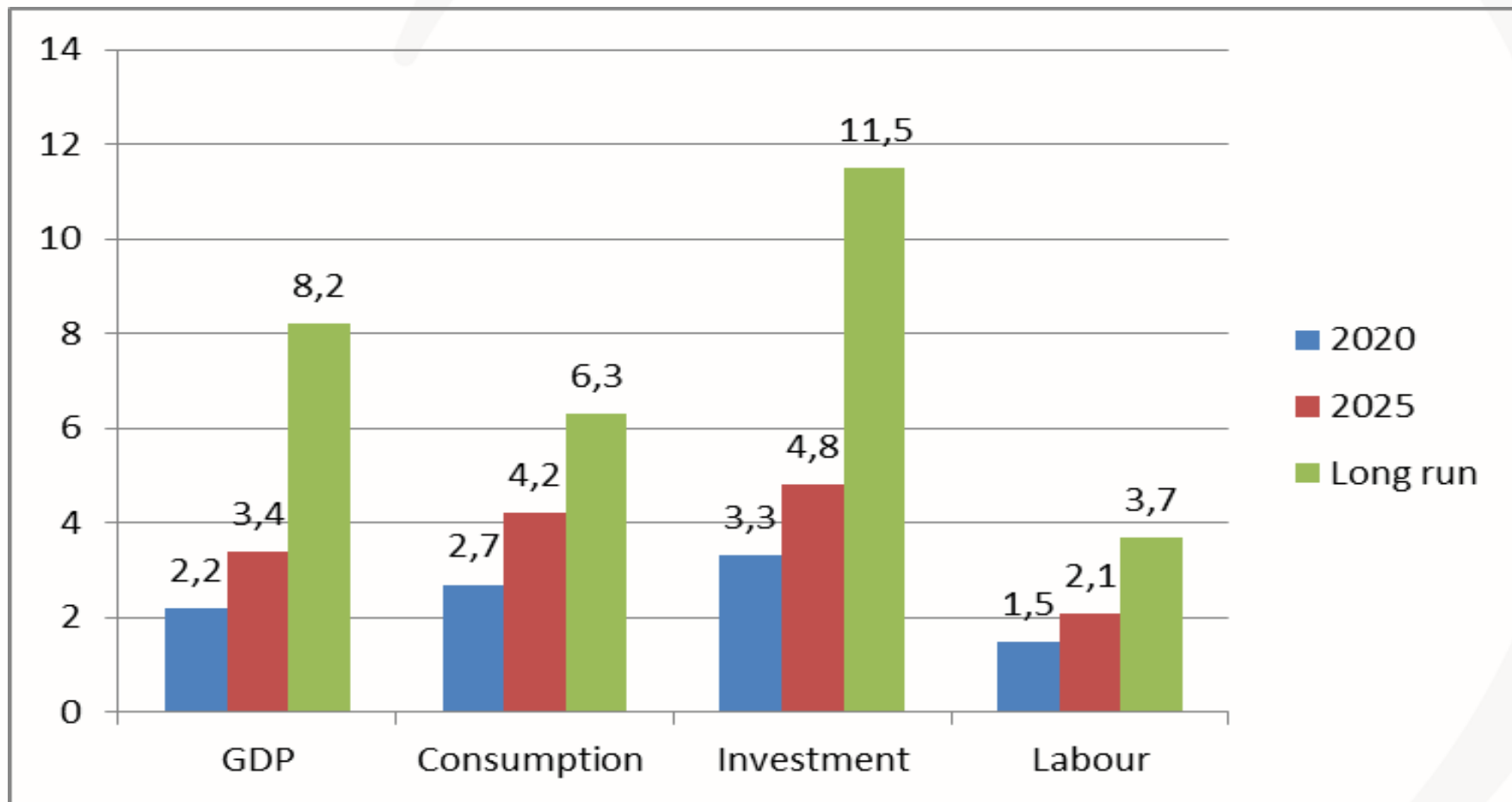
But there is a relevant issue ……….Timing and credibility

- Timing problem - simulations under the assumption that all changes are implemented:

  - **immediately**: the economy is initially in steady state and the reform plan is immediately and fully implemented (Big-Bang hypothesis)
  - **gradually**: the economy is initially in steady state, the reform plan is announced and starts to be implemented phasing in gradually (gradual hypothesis)

- Under gradual implementation of an announced reform plan the credibility (and/or bounded rationality) problem should be addressed.

Credibility issues

- The **relevance of credibility** in implementing reforms is of utmost importance.

- Credibility is crucial in determining how quickly costs and benefits of reforms will materialise.

- If reform plans are credible, then their positive effects on short-term demand, via confidence, could more than compensate for any negative transitory effect.

Modelling Credibility- What we do

▪ We evaluate the effects of gradually implemented policy reforms under different hypotheses regarding the credibility of the reform plan:

- **Perfect credibility** (benchmark case: hypotheses adopted in the NRP simulations).

- **Doubting Thomas** (stepwise credibility): agents are skeptical about announcements and only believe in the piece of the reform currently implemented and in their long lasting effects, i.e. agents do not trust the announcements of the future reform implementation.

Model credibility - What we do

Consider a generic forward looking (i.e. jumping) variable, say Y_t depending on a non-exogenous state variable (the policy variable), u_t:

$$Y_t = \beta\, Y_{t+1}^e + \gamma\, u_t \tag{1}$$

where $0 < \beta < 1$, and $\gamma > 1$ and the supercript 'e' stands for 'expected'.

Assume that at time t a reform plan is announced and so a time path for u_t: $\{u_t\}_{i=0}^{\infty}$.

Also let us assume that initially $u_{t-1} = 0$ for $i = 1, 2, 3, ..$, then we have $Y_t = 0$

Now let's solve equation (1) under two different assumptions:
- Perfect credibility
- s.c. Doubting Thomas

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Perfect credibility

This is the case of perfect foresight: $Y_{t+1}^e = Y_{t+1}$

By forward iteration, imposing a transversality condition, equation (1) can be written as

$$Y_t = \gamma \sum_{i=1}^{\infty} \left(\beta^i u_{t+i} \right)$$

as a results of the current and future changes in the policy variable.

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Doubting Thomas

In this case agents only believe in what they see, but they perceive the current policy change as permanent

$$Y_t = \beta Y^e_{t+1} + \gamma\, u_t$$

$$Y^e_{t+1} = \beta Y^e_{t+2} + \gamma\, u^e_{t+1}$$

where $u^e_{t+1} = u_t$

By forward iteration:

$$Y_t = \gamma \frac{u_t}{1-\beta}$$

To sum up

Fully credible

$$Y_t = \gamma \sum_{i=1}^{\infty} \left(\beta^i u_{t+i} \right) = \gamma(u_t + \beta u_{t+1} + \beta^2 u_{t+2} + \beta^3 u_{t+3} + ...)$$

Doubting Thomas

$$Y_t = \gamma \frac{u_t}{1 - \beta}$$

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Scenarios

- For the sake of comparability we abstract from some adjustment costs and taxation rules. In particular:

  - **Adjustment costs** on labour, investments, import and exports have been switched off. Also adjustment costs on nominal variables, such as prices and wages have been turned off.

  - Tax rule, transfers and benefits have been turned off.

  - All **fiscal interventions** are ex-ante budget neutral (lump-sum tax to balance the budget).

Price Markup reduction
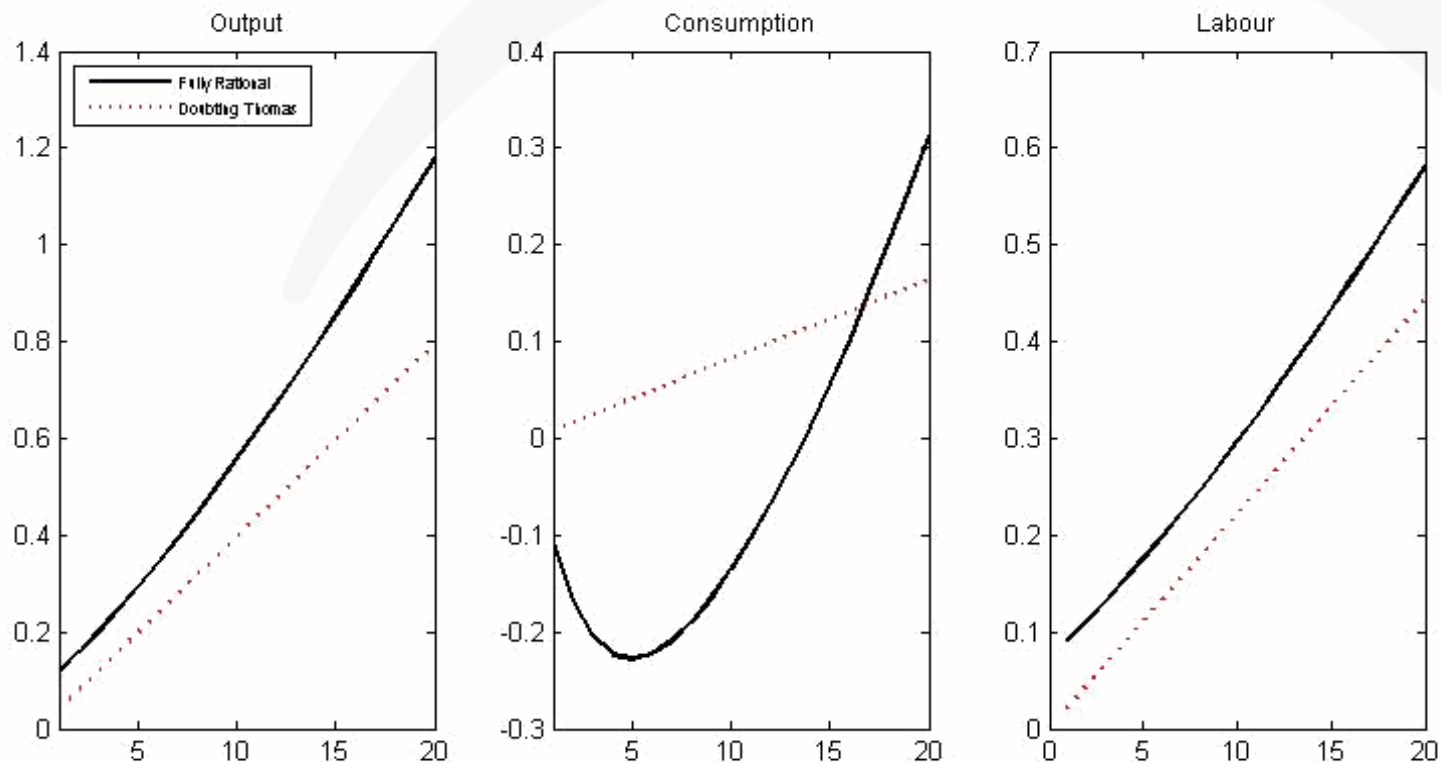
As expected, **expansionary effects are higher** in the benchmark case as a result of the anticipation of future gains.

Households tend to postpone **consumption** in the benchmark, while consumption is shown to be steadily increasing in the alternative scenario.

Also, **labour demand** increases as a result of a higher level of economic activity.

# Increase in public spending
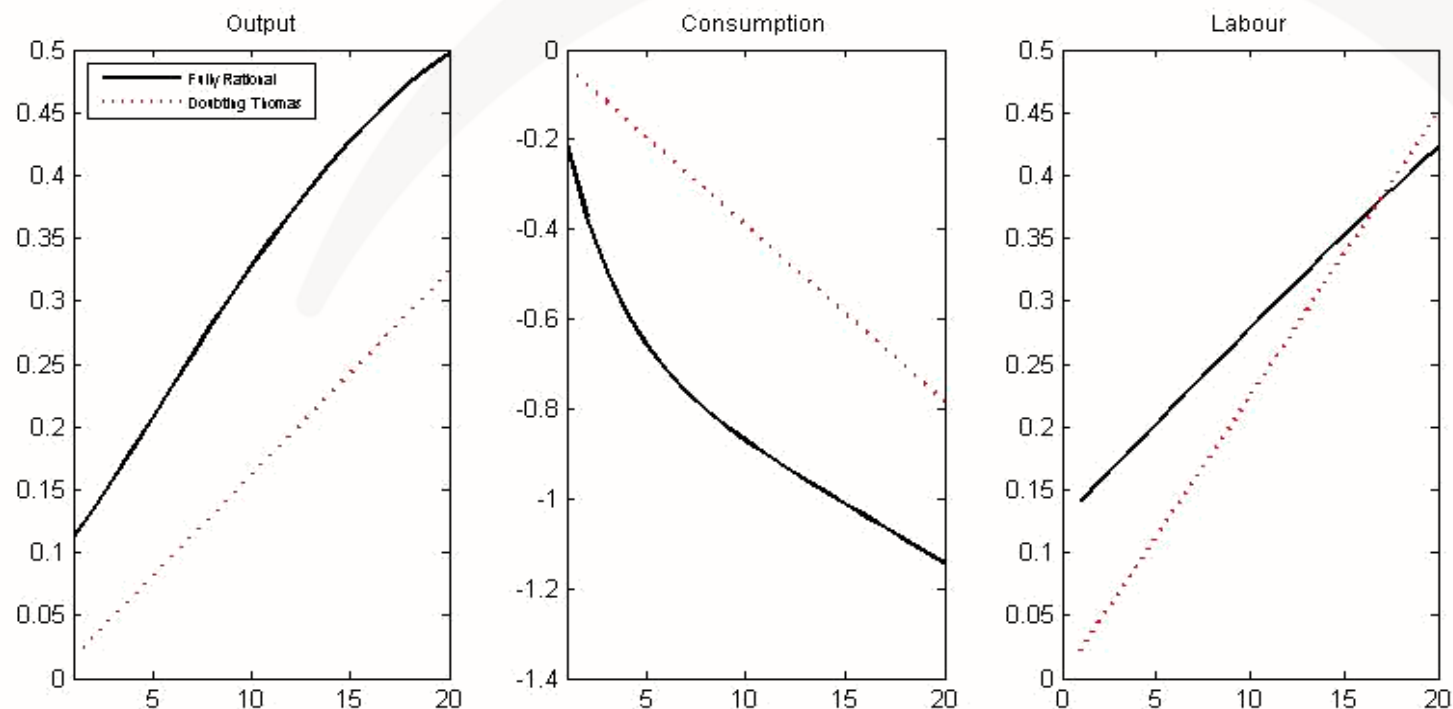
In both scenarios private **consumption** exhibits a **permanent fall** while labour supply rises due to the negative wealth effect.

In the Doubting Thomas scenario agents tend to postpone consumption decisions, having a 'partial' view of the future benefits from the shock.

Indeed, they perceive the increase in public consumption as 'gradual' and just partially take into account higher future taxation.

Decrease in consumption taxes (VAT)
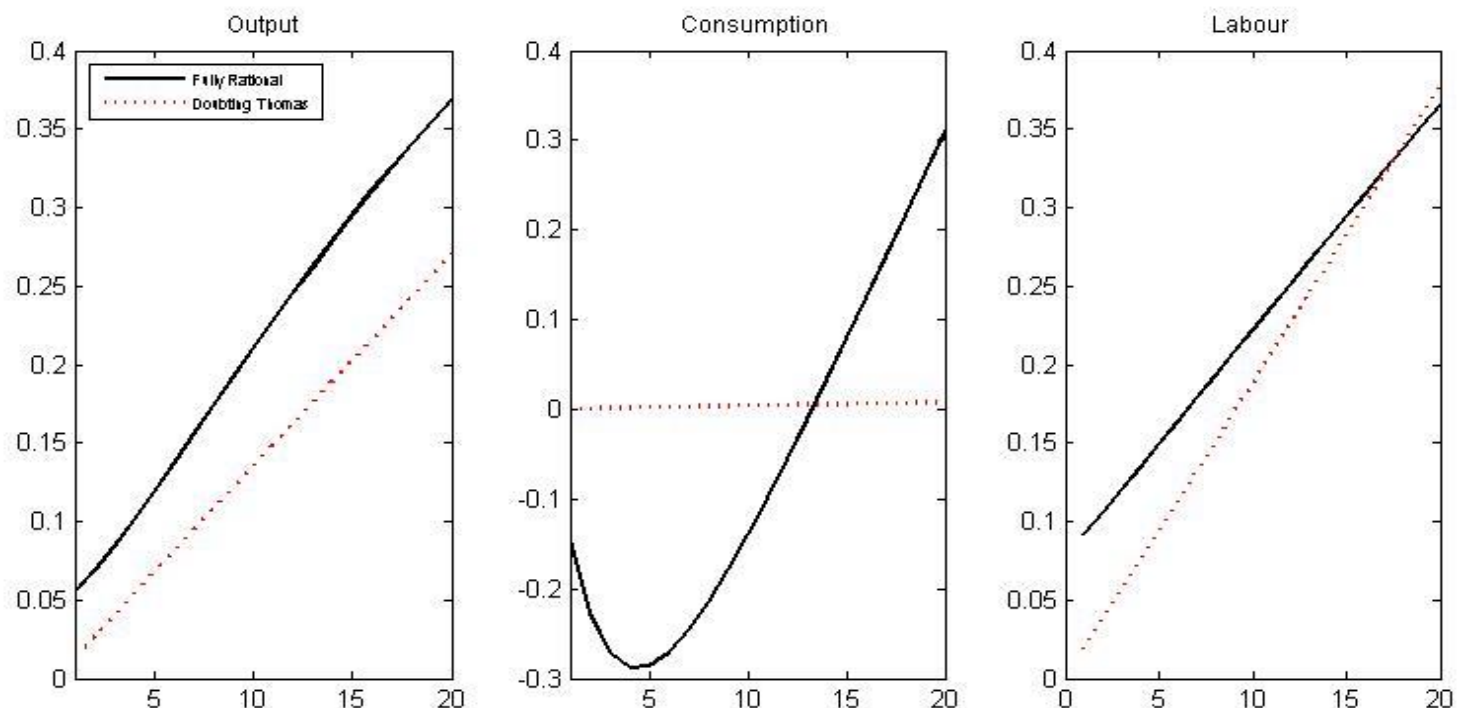
Reduction in **consumption tax** drags down distortion in the goods market inducing an expansion of output and labour.

Forward looking agents delay consumption when the tax reform is advancing.

Reduction of consumption taxes has a **negative impact on the terms of trade** inducing an expansion of export.

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thank you !