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Structural Reforms and the Potential Effects on the Italian Economy

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Motivation and Aim

- Since the second half of 2011 Italy has found itself at the center of a severe economic crisis.
- Concerns about the sustainability of its debt burden, along with gloomy growth prospects, have pushed up the cost of government borrowing.
- Two mounting challenges:
 - (i) achieve a rapid fiscal consolidation to restore financial market confidence;
 - (ii) implement structural reforms to strengthen medium-term growth prospects.
- An intensive reform agenda urges economic institutions to quantify the macroeconomic impact of complex reform scenarios.



Motivation and Aim

- A deep understanding of the functioning of the simulation tools available at the Department of the Treasury of the Italian Ministry of Economy and Finance is of utmost importance.
- National Reform Programmes (NRPs)
 - the elements necessary for monitoring progress towards the Europe 2020 national targets;
 - the assessment of the impact of the reforms through *simulation analysis*.
- Using the European Commission's model QUEST III with R&D, adapted to Italy, we quantify the *potential* effects of a set of interventions *inspired* to the reform packages currently being undertaken or under discussion.



Methodology

- We study alternative reform scenarios differing in both breadth and depth and evaluate the effects on the main macrovariables.
- For each scenario: joint versus disjoint implementation of the reforms in each area of policy intervention (explore the interlinkages of the model).
- The exercise provides a set of structural reforms, but all policy interventions and results are intended to be only exploratory.
- We also consider reform scenarios embedding a fiscal consolidation package equivalent to 6% of the GDP.



Policy Areas

- The first policy area of intervention, labeled *liberalization and simplification (product market)*, refers to all policies:
 - promoting competition in the product markets
 - reducing the administrative and regulatory burden
- The second area of policy interventions labeled *labor markets* includes a set of policies aimed at:
 - increasing employment and the participation rate
 - favoring social inclusion
- The *fiscal consolidation* package includes several provisions aimed at reducing the debt burden



The Simulation Tool: The QUEST III Model

- QUEST III with R&D is a structural macroeconomic model with semi-endogenous growth developed by the Directorate General for Economic and Financial Affairs (DG ECFIN) of the European Commission (see Roeger, Varga & in't Veld, 2008).
- Modular approach: different versions of QUEST exist.
- In the version of QUEST III used in the present analysis the economy is confined to Italy (see D'Auria et al. 2009).



The Simulation Tool: The QUEST III Model

- Dynamic General Equilibrium (DGE) model: Agents decisions based on dynamic optimization subject to technological, budgetary and institutional constraints (microfoundations).
- The model features eight types of economic agents: (i) households-workers, (ii) trade unions, (iii) final goods firms, (iv) intermediate goods firms, (v) R&D sector, (vi) foreign sector, (vii) the government, (viii) the central bank.
- Heterogenous households: non-liquidity constrained & liquidity-constrained
- Anticipatory effects of announced future reform interventions (timing matters).



The Simulation Tool: The QUEST III Model

- Adjustment costs on nominal and real variables to capture the typical persistence of macrovariables and the dynamics in response to shocks.
- Several imperfections in labor and product markets
- Explicit modeling of structural rigidities (markups, entry barriers, overhead labor)
- A battery of fiscal variables (taxes on consumption, labor income, capital, tax credit allowances, government consumption and investments, subsidies).



The Simulation Tool: The QUEST III Model

- Monopolistic competitive final good producers charge a markup, μ_p , over MC, employ labor of different skills (supplied by households) and intermediate goods, faces fixed costs and overhead labor

$$Y_t^j = \left[A^{exog} \left(L_{Y,t}^j - FC_L \right) \right]^\alpha \left[\sum_{i=1}^{A_t} (x_{i,t}^j)^\theta \right]^{\frac{1-\alpha}{\theta}} KG_t^{1-\alpha_G} - FC_Y, \quad \theta, \alpha, \alpha_G \in (0,1),$$

where

$$L_{Y,t}^j = \left[s_L^{\frac{1}{\sigma_L}} \left(ef_L L_t^L \right)^{\frac{\sigma_L-1}{\sigma_L}} + s_M^{\frac{1}{\sigma_L}} \left(ef_M L_t^M \right)^{\frac{\sigma_L-1}{\sigma_L}} + s_{H,Y}^{\frac{1}{\sigma_L}} \left(ef_H L_t^{HY} \right)^{\frac{\sigma_L-1}{\sigma_L}} \right]^{\frac{\sigma_L}{\sigma_L-1}},$$



The Simulation Tool: The QUEST III Model

- Monopolistic competitive intermediate producers employ capital rented from households.

To enter the market and start production, intermediate goods firms must license a patent from the households and pay a fixed cost FC_A - The optimal price set by firm will be equal to a markup μ_{PX} over marginal cost.

- Number of intermediates goods depend on the number of patents in the economy (i.e. the stock of knowledge), which, depend on the R&D activity as in Jones (1995).



The Simulation Tool: The QUEST III Model

- The **non liquidity constrained households**

- own domestic and foreign assets
- accumulate physical capital which they rent out to the intermediate goods producers
- buy the patents produced in the R&D sector and license them to the intermediate goods sector
- supply medium and high skilled labor services to the final goods sector and to the R&D sector
- choose the optimal consumption plan on the basis of all the available information and taking into account all technological, institutional and budgetary constraints of the economy

- The **liquidity constrained households**

- do not have access to financial markets,
- consume all their after tax labor income
- supply low skilled labor services to the final goods sector.



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The Simulation Tool: The QUEST III Model

- **Trade unions** set the nominal wage for each category of labor services to max households' expected utility, given firms' labor demand.
- Each specific kind of labor service is an imperfect substitute for services supplied by other workers (market power).
- Neglecting adjustment costs, typical wage equation of skill type s is

$$\frac{W_t^s}{P_t^C} = \text{MU}^{W^s} \frac{1 + t^C}{1 - t^{w,s} - b^s} MRS_{t,C,1-L}$$



The Simulation Tool: The QUEST III Model

- By modeling final and intermediate goods markets as **imperfectly competitive** and by embodying **entry costs and administrative burden**, QUEST III can be used to assess the effects of **competition-enhancing** policy and of administrative simplification interventions.
- Given the distinction of employment in **three skill categories** (low, medium, high), the inclusion of benefit replacement rates, **labor taxes and of imperfect competition**, it is possible to fruitfully study the implications of many **labor market reforms**.



Mapping the Policy Interventions onto the Model

Liberalization and Simplification (Product Market)

Policy variables / transmission channels in QUEST III	Examples of possible reform measures
Product markets markup	Policies to enhance competition and create a more friendly business environment.
Firms' administrative burden (overhead labour)	Reductions in administrative and regulatory burden; greater efficiency of e-government services; reduce administrative opacity.
Entry barriers in product markets (reducing fixed entry costs)	Cutting the cost and the time spent to start up a new firm



Mapping the Policy Interventions onto the Model

Labor market

Policy variables / transmission channels in QUEST III	Examples of possible reform measures
Wage markup	Fixing aggregate wage targets compatible with macro productivity trends, price stability and external competitiveness.
Tax shifts from labor to consumption	Tax reforms with the scope of reducing distortions in the labor market and providing more incentives to labor market participation.

Source: European Commission (2010)



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Mapping the Policy Interventions onto the Model

Fiscal Consolidation (I part)

Policy variables / transmission channels in QUEST III	Examples of possible reform measures
Cut in transfers to households	To map social security reforms and pensions cuts.
Reduction of public consumption	To reproduce the cut in public spending
Increase in consumption tax rate	To reproduce the increase in the value added tax and in the fuel excise tax

Source: European Commission (2010)



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Mapping the Policy Interventions onto the Model

Fiscal Consolidation (II part)

Policy variables / transmission channels in QUEST III	Examples of possible reform measures
Increase in labor income tax	To map the rise of the additional regional tax rate on labor income.
Increase in tax rates on tangible capital	To map the additional extraordinary tax for the repatriation/regularization of capital held abroad (i.e. the “tax shield” program), the introduction of the new municipal property tax and the increase in the <i>cadastral rental</i> value of the residential property
An <i>exogenous</i> improvement in the public sector balance budget	To reproduce the increased revenues from measures aimed at reducing tax evasion, widen the tax base and curtail the black economy.



Scenarios Description

- The exercise explores a wide range of reforms as well as different degrees of progress across scenarios.
- Progress = closing part of the Italian performance gaps versus the three best-performing EU countries.
- At time $t=1$ the reform plan is announced and the reform policy measures start to be implemented phasing in gradually over five years (a reasonably smooth implementation timetable).
- The fiscal consolidation package is introduced over a period of three years.
- All reforms are assumed to be permanent, as common practice in applied economic modeling (terminal conditions problem to be solved - see Roeger and in't Veld 1999).
- Tax rule switched off for 20 years.



Scenarios Description

- **Scenario A:** a *moderate* reform ex-ante budget-neutral scenario in which Italy closes the gap towards the EU best performers by 1/3 with a tax shift from labor to consumption of 0.05% of the GDP;
- **Scenario B:** a *substantial* reform ex-ante-budget-neutral scenario aimed at closing the gap by 1/2 with a tax shift of 0.1% of the GDP;
- **Scenario C:** a *radical* reform ex-ante-budget-neutral scenario in which it is assumed that Italy will completely close the gap and perform a tax shift equal to 0.2% of the GDP;
- **Scenario D:** *Scenario A* + *fiscal consolidation package* with a cumulative adjustment equivalent to 6% of the GDP;
- **Scenario E:** *Scenario B* + *fiscal consolidation package* with a cumulative adjustment equivalent to 6% of the GDP .



Scenarios Description

		Scenario A	Scenario B	Scenario C	Scenario D	Scenario E
Liberalization and Simplification	Reduce markup in the intermediate goods sectors ⁽¹⁾	0.3pp	0.5pp	1pp	0.3pp	0.5pp
	Reduce markup in the final goods sector ⁽¹⁾	1.43pp	2.15pp	4.3pp	1.43pp	2.15pp
	Reduce entry cost in the services ⁽¹⁾	4.4%	6.7%	13.3%	4.4%	6.7%
	Reduce entry cost in manufacturing ⁽¹⁾	12.6%	18.9%	37.8%	12.6%	18.9%
	Reduce administrative burden ⁽¹⁾	1%	1.7%	3.4%	1%	1.7%
Labor Market	Increase elasticity of subst. between labor inputs ⁽²⁾	10.7%	16.1%	32.2%	10.7%	16.1%
	Tax shift from labor to consumption	0.05% of GDP	0.1% of GDP	0.2% of GDP	0.05% of GDP	0.1% of GDP
Fiscal Consolidation	Reduce public consumption	...	...	...	1.6% of GDP	1.6% of GDP
	Reduce transfers to households	...	...	...	0.1% of GDP	0.1% of GDP
	Increase consumption tax	...	...	...	1.5% of GDP	1.5% of GDP
	Increase labour tax	...	...	...	1% of GDP	1% of GDP
	Extra revenues from fight against tax evasion	...	...	...	0.3% of GDP	0.3% of GDP
	Increase tax on capital	...	...	...	1.5% of GDP	1.5% of GDP

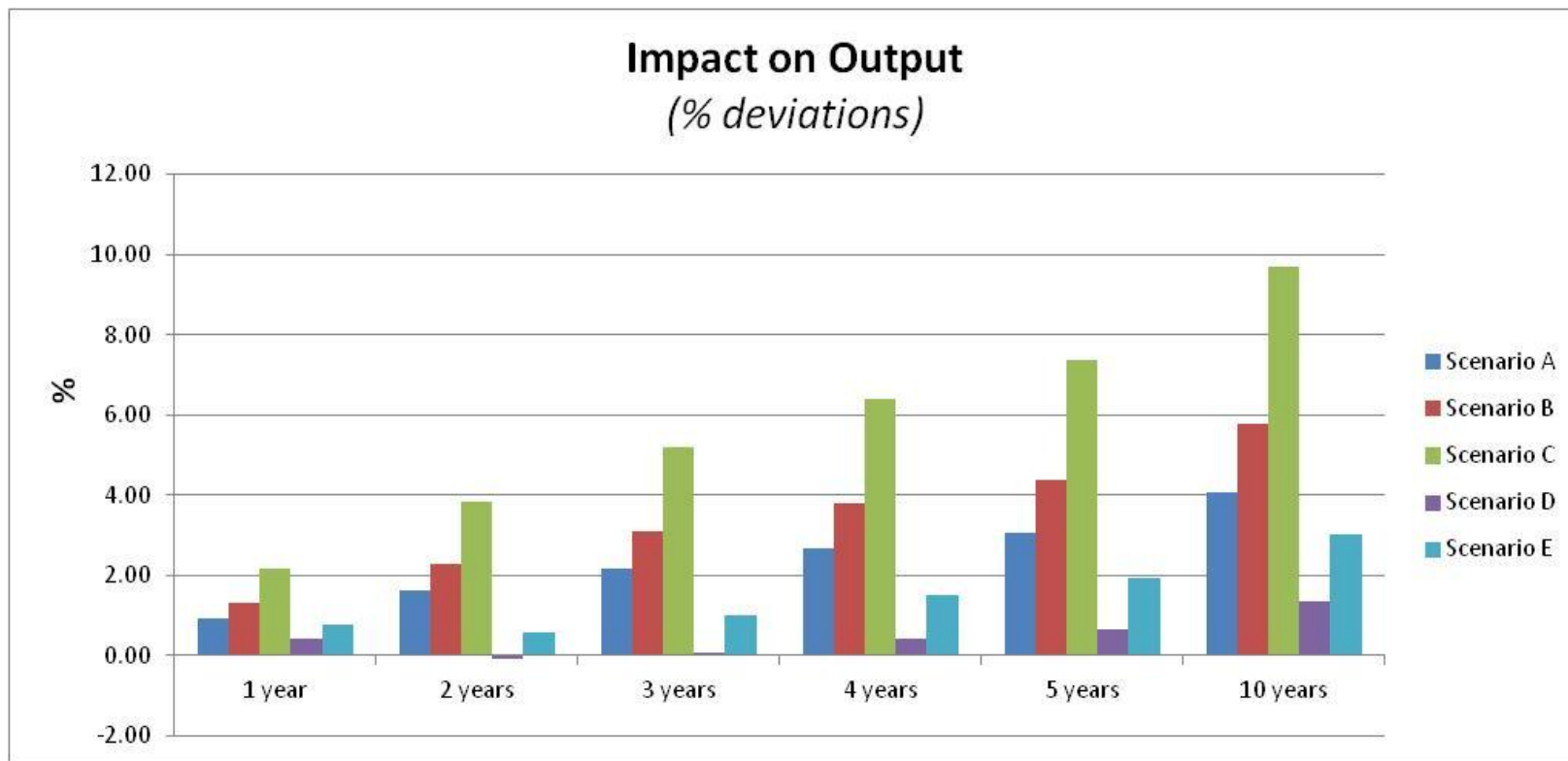
Note: degree of effort based on our elaboration of country variants of the QUEST III model: (1) gap reduction towards the EU15 best performers; (2) gap reduction towards the EU27 best performers.



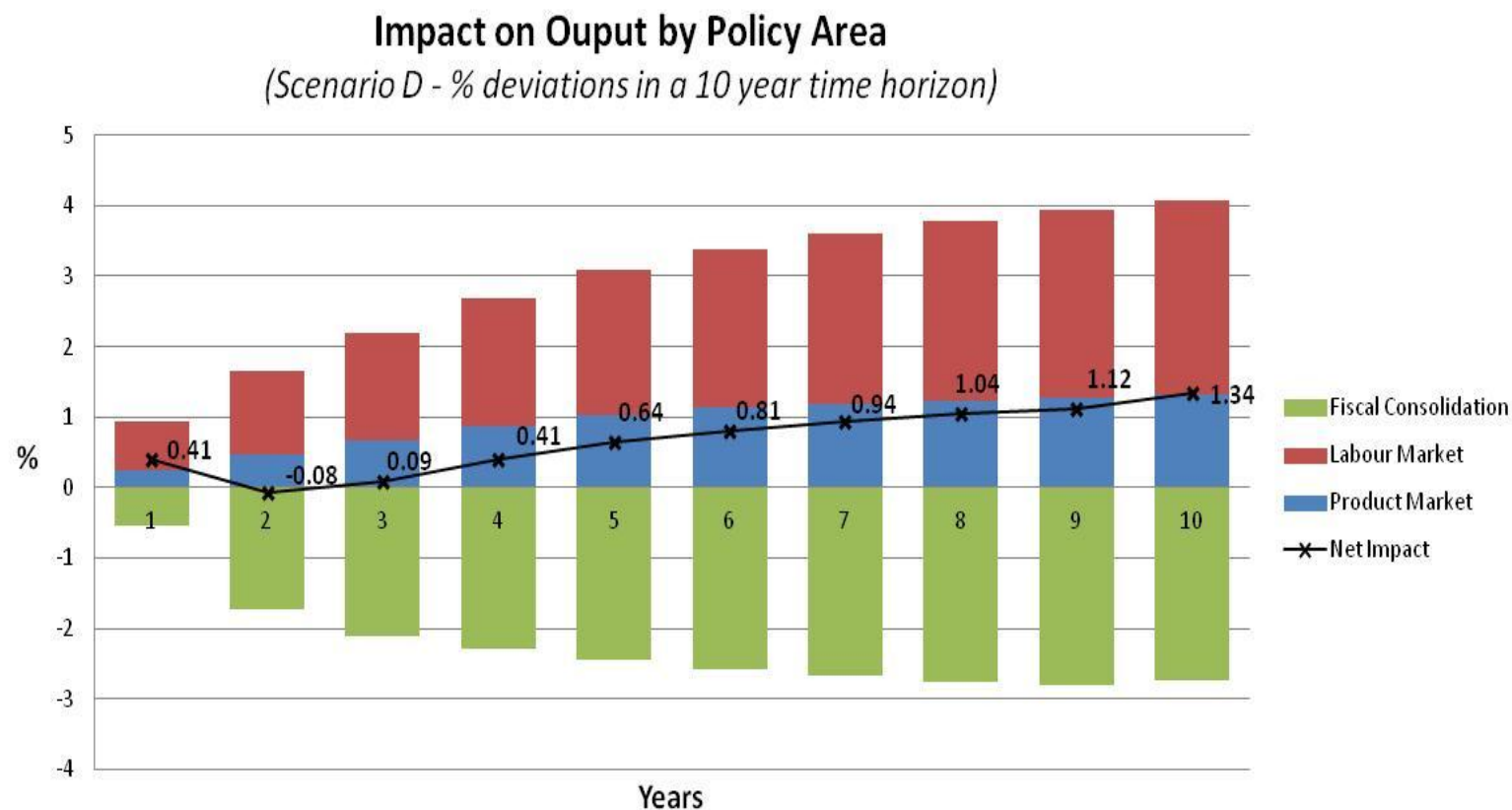
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Impact on Output under Different Scenarios



Impact on Output by Policy Area

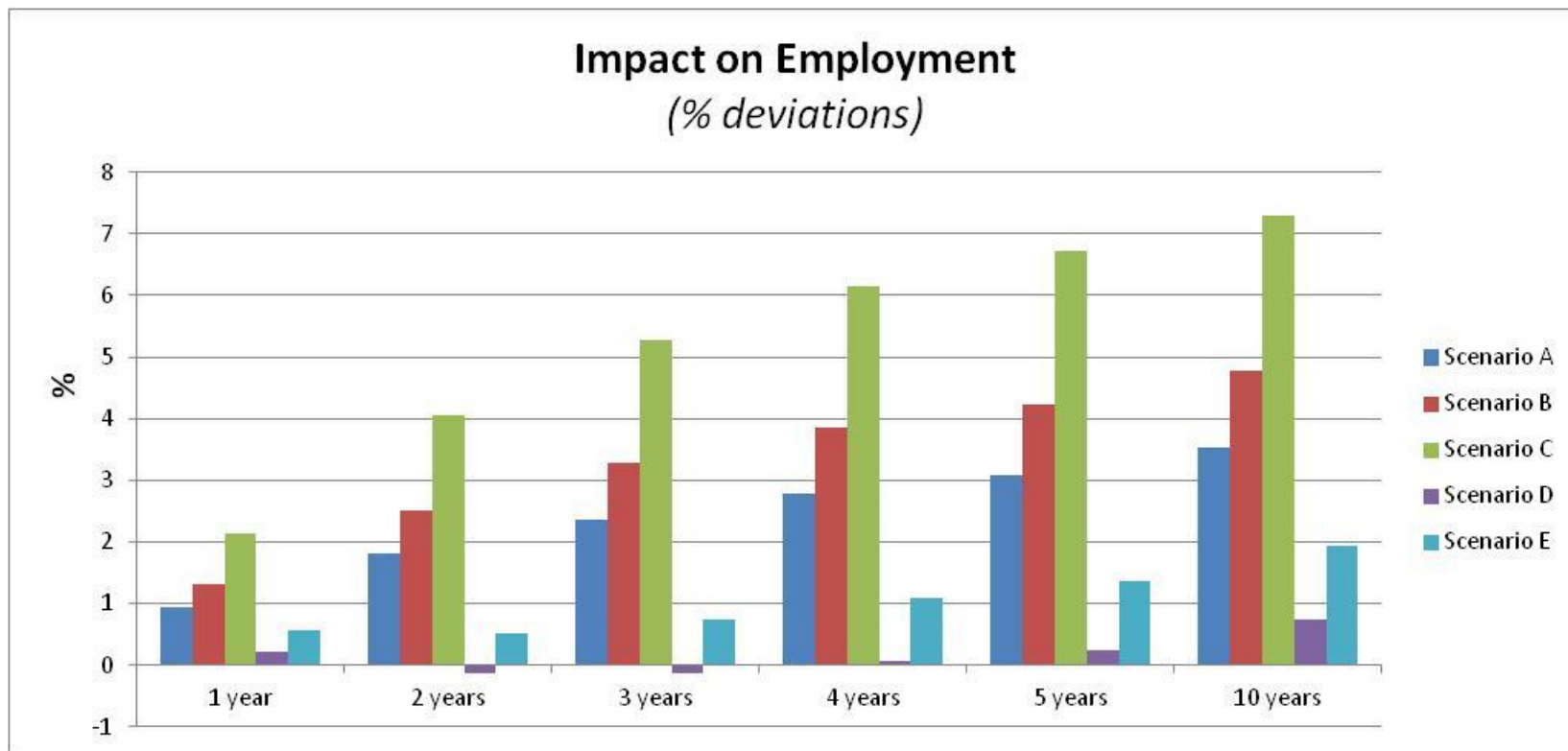


Impact on Output: Taking Stock

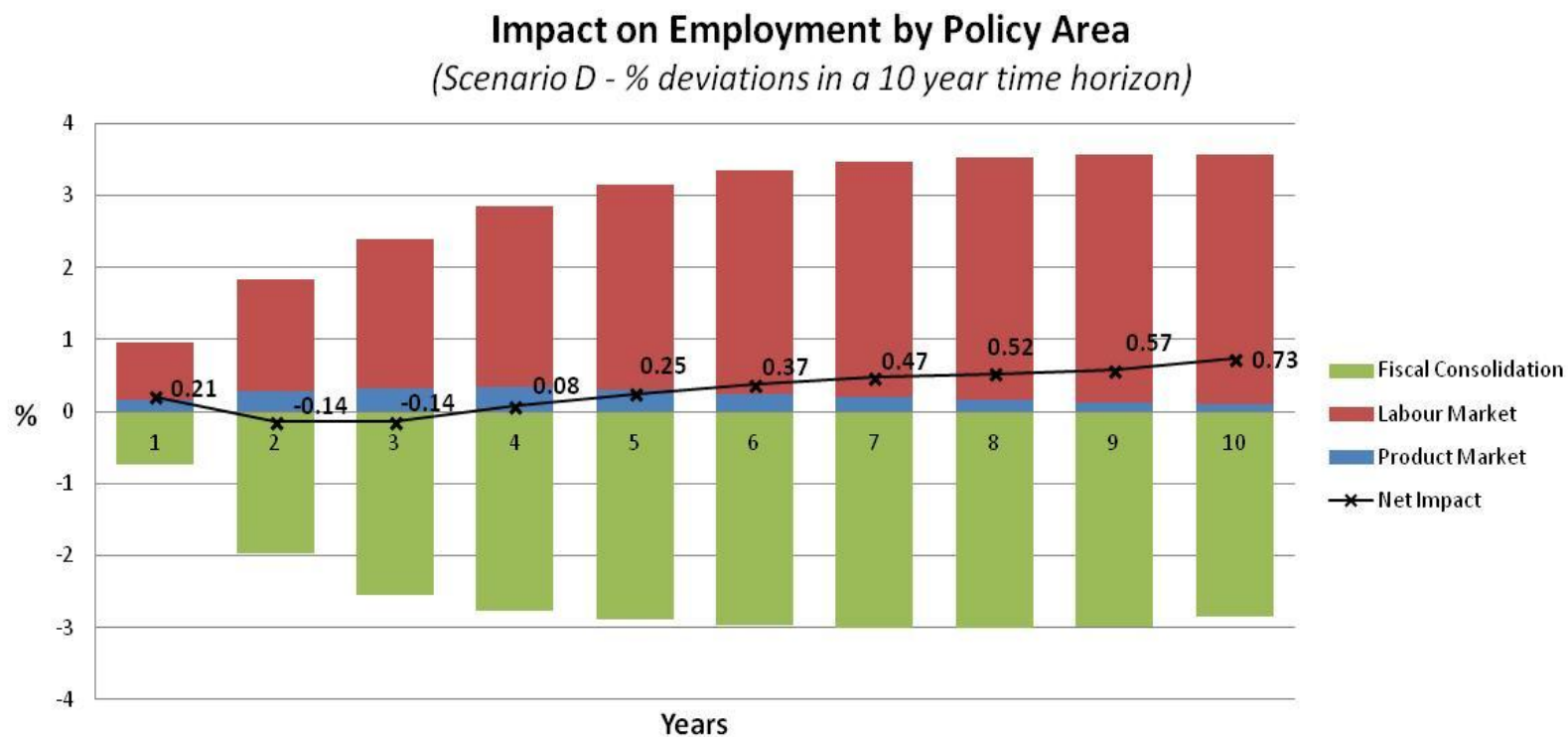
- After 10 years structural reforms may boost output with respect to the initial steady state from 4.06% in the moderate reform Scenario A, up to 5.77% in the substantial reform Scenario B.
- Scenario C shows that there's much scope for growth up to a cumulated increase in output of 9.69%.
- The major contribution is to be attributed to the policies intervening in the area of labor markets able to boost output up to 2.74% in scenario A and to 3.70% in scenario B.
- All reforms are likely to produce positive effects on output already in the short run.
- The fiscal austerity plan severely erodes the positive effects of the reforms and in the less ambitious scenario the economy undergoes a recession in the second year of intervention.
- As result of the vigorous fiscal consolidation package the average output growth rate gain in ten-year time horizon reduces from 0.6% to 0.3% in the substantial reform scenario and from 0.4% to 0.1% in the moderate reform scenario.



Impact on Employment under Different Scenarios



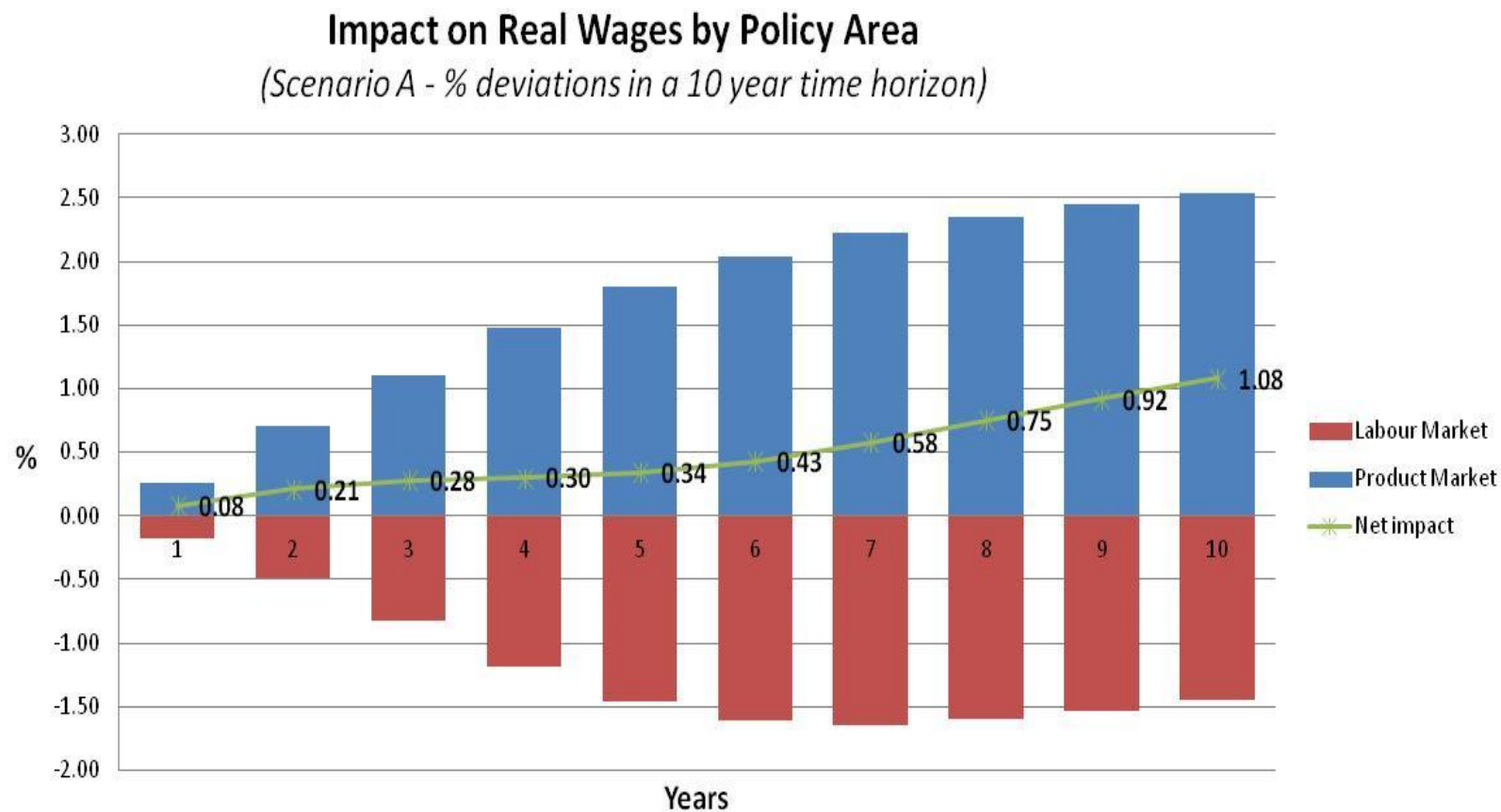
Impact on Employment by Policy Area



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Impact on Real Wages by Policy Area

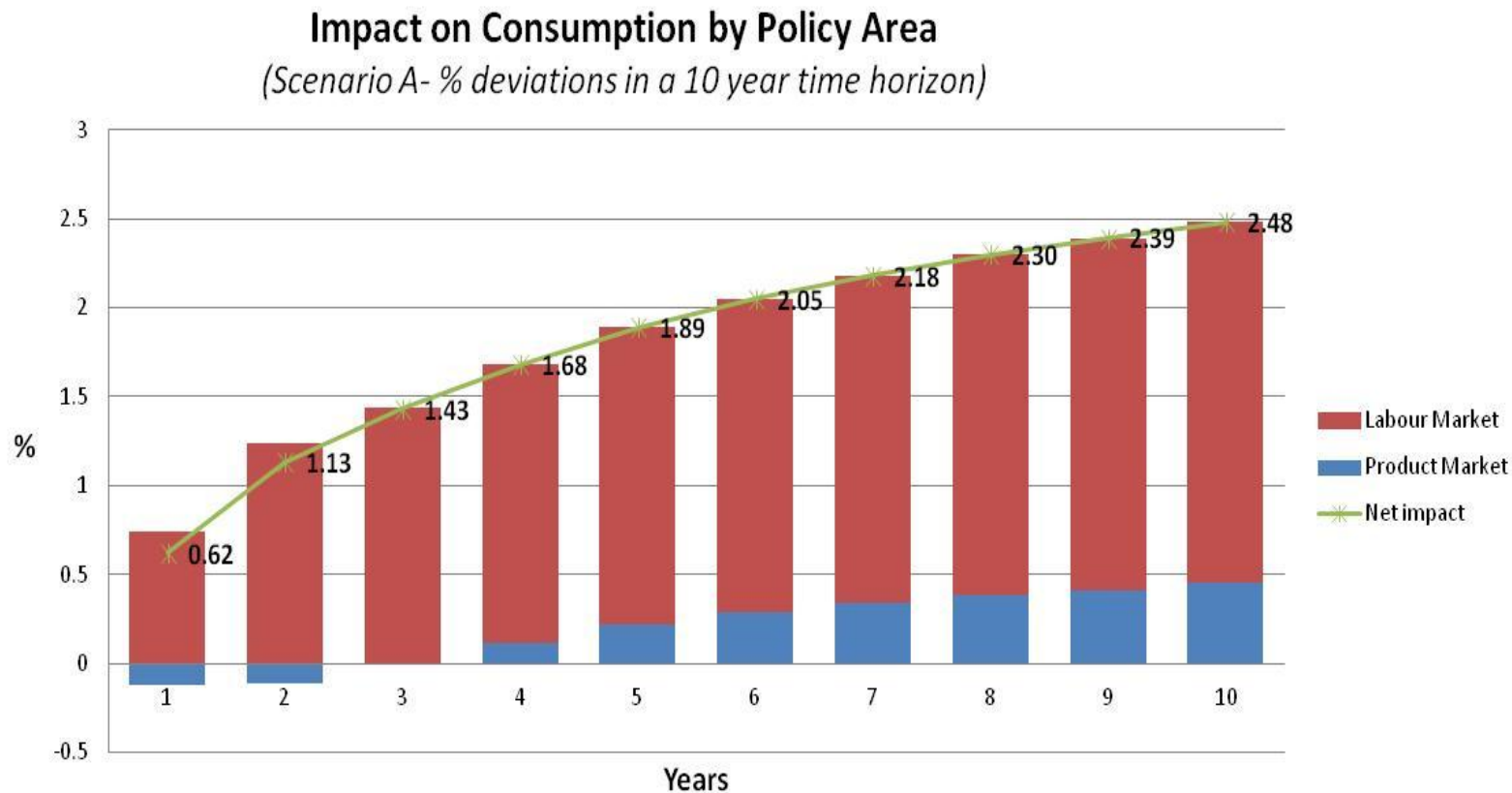


Impact on Employment: Taking Stock

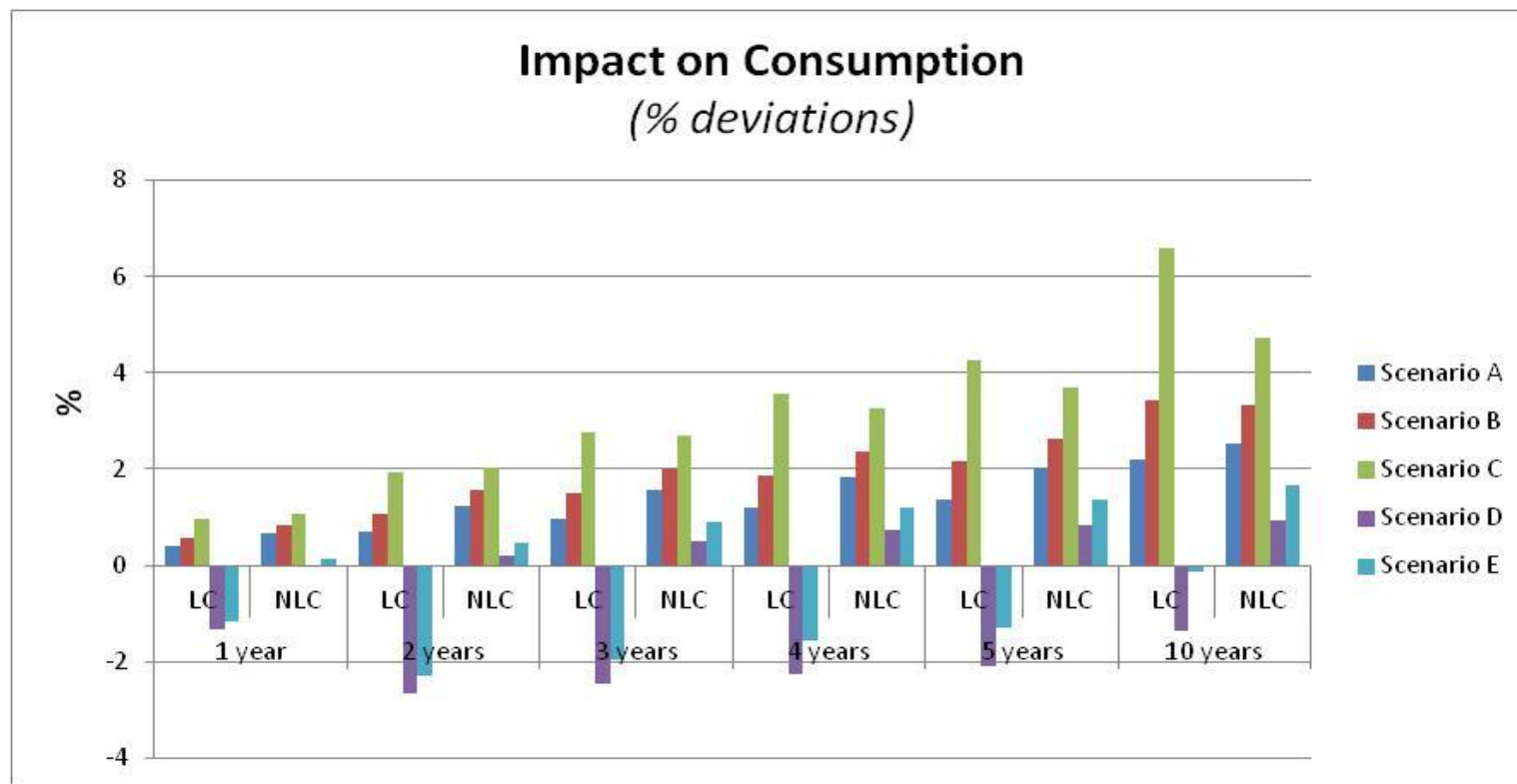
- After 10 years the moderate reform Scenario A would imply an increase of 3.54% , while the substantial reform Scenario B an increase of 4.78%.
- Employment is strongly affected by all the labor market interventions which have a direct impact on labor and supply schedules.
- Wage moderation pushes toward an alignment of wages to productivity trends and, at the same time, fiscal reforms aimed at narrowing the labor tax wedge, reduce fiscal distortions and deadweight losses due to the strong fiscal pressure on labor income.
- Product market measures produce very small effects on employment, since in QUEST the labor market is characterized by strong rigidities (adjustment costs) which are responsible for the slow and costly adjustment of employment in response to shocks.



Impact on Consumption by Policy Area



Impact on Consumption of LC and NLC Households under Different Scenarios



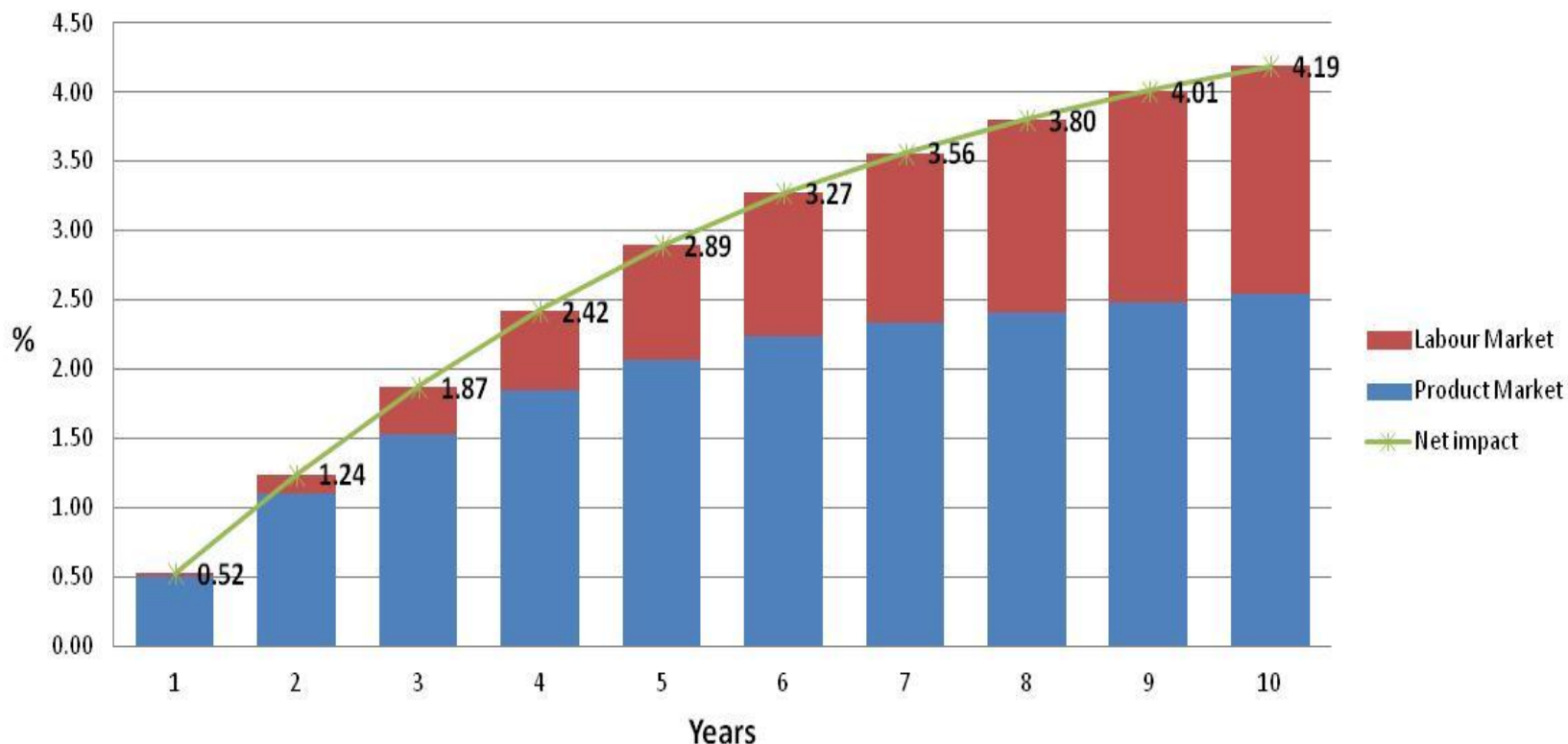
Impact on Consumption: Taking Stock

- Aggregate consumption would increase up to 2.44% and 3.35% (with a potential 5.25%) after 10 years.
- Forward looking non liquidity constraint consumers postpone their consumption decisions during the early phases of the reform process.
- The fiscal austerity plan is likely to severely mitigate the positive effects of the interventions, especially during the earlier phases of the reform process.
- Most of these losses accrue to liquidity-constraint households who would experience a drop in consumption.



Impact on Investments by Policy Area

Impact on Investments by Policy Area
(Scenario A- % deviations in a 10 year time horizon)

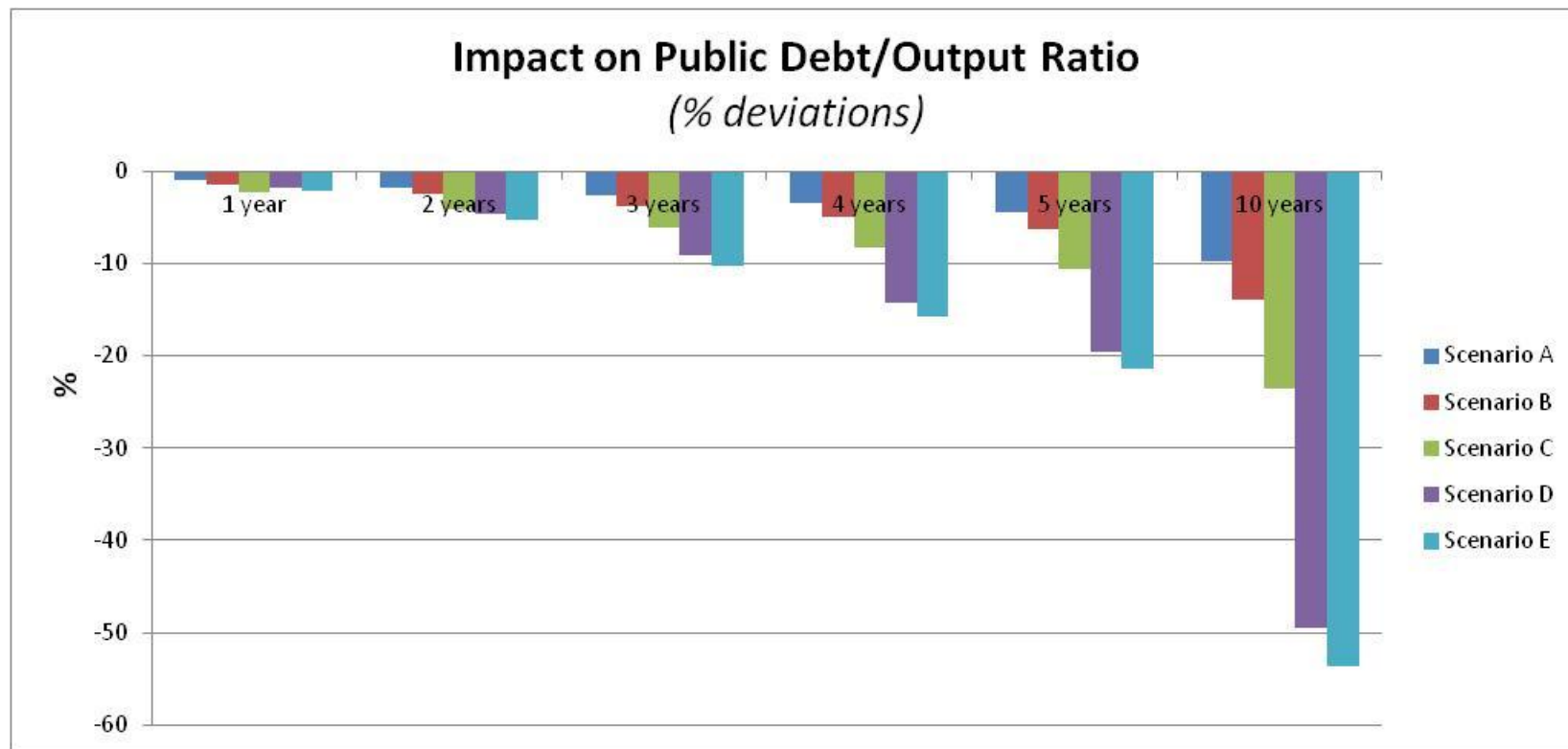


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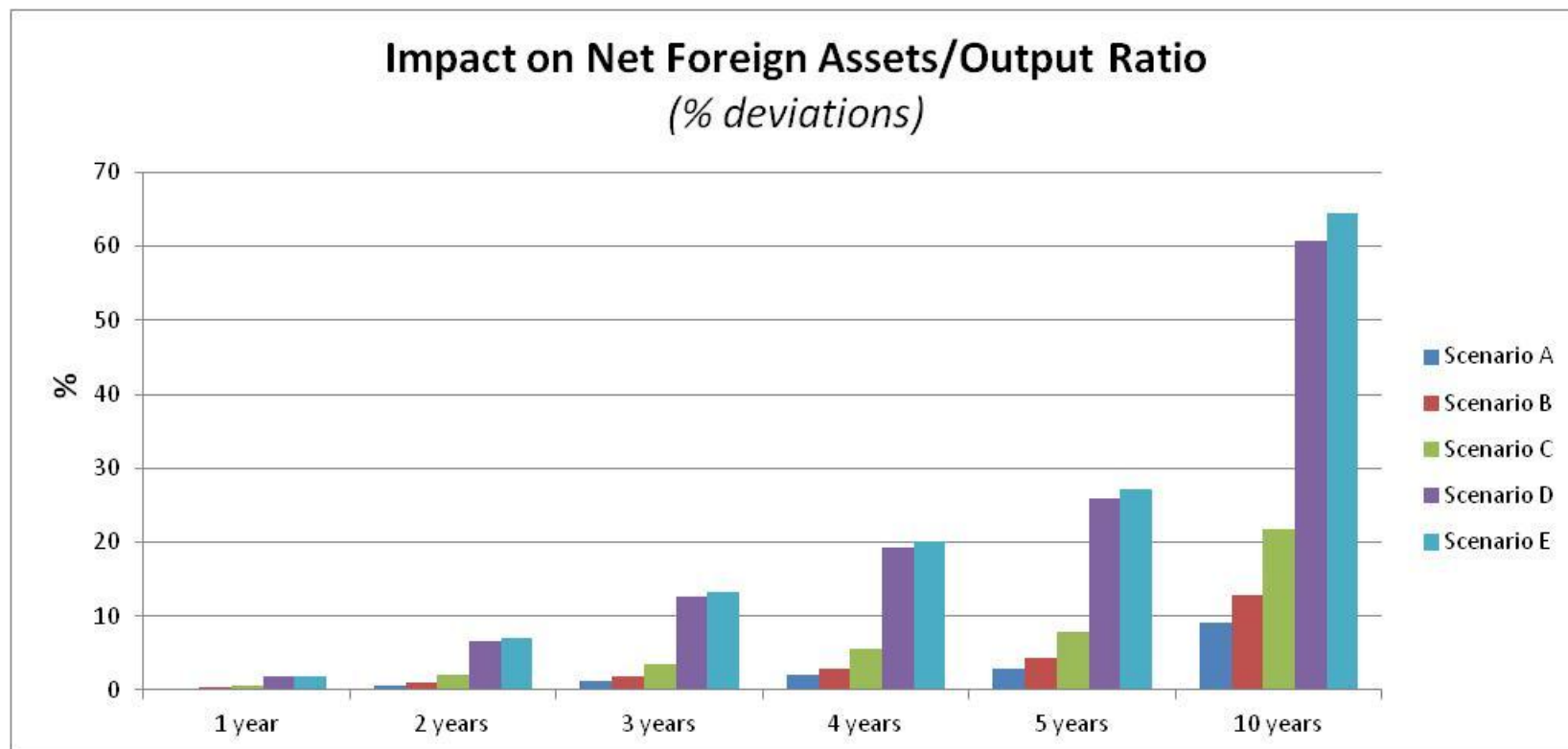


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Impact on Public Debt under Different Scenarios



Impact on Net Foreign Assets under Different Scenarios



Macroeconomic Effects under Different Scenarios

	Scenario A						Scenario B						Scenario C					
	1	2	3	4	5	10	1	2	3	4	5	10	1	2	3	4	5	10
Output	0.92	1.61	2.17	2.66	3.06	4.06	1.31	2.29	3.10	3.79	4.37	5.77	2.18	3.83	5.21	6.41	7.38	9.69
Consumption	0.60	1.10	1.40	1.65	1.85	2.44	0.77	1.43	1.86	2.22	2.51	3.35	1.04	2.01	2.73	3.34	3.86	5.25
Consumption (NLC)	0.68	1.24	1.56	1.82	2.03	2.54	0.85	1.57	2.00	2.35	2.64	3.32	1.06	2.04	2.70	3.25	3.71	4.74
Consumption (LC)	0.39	0.72	0.97	1.19	1.38	2.19	0.57	1.08	1.50	1.86	2.18	3.42	0.98	1.94	2.78	3.56	4.25	6.59
Investments	0.52	1.23	1.86	2.41	2.88	4.19	0.82	1.94	2.90	3.72	4.41	6.29	1.62	3.79	5.58	7.07	8.29	11.50
Employment	0.93	1.80	2.36	2.78	3.08	3.54	1.31	2.50	3.28	3.85	4.24	4.78	2.14	4.06	5.28	6.16	6.71	7.30
Real wages	0.08	0.23	0.30	0.33	0.36	1.05	0.16	0.43	0.61	0.74	0.85	1.98	0.36	1.00	1.54	2.00	2.42	4.80
Terms of trade	-0.70	-1.03	-1.36	-1.66	-1.89	-2.45	-1.01	-1.48	-1.94	-2.34	-2.67	-3.41	-1.73	-2.51	-3.25	-3.89	-4.40	-5.52
Net foreign assets (% GDP)	0.23	0.66	1.23	1.99	2.94	9.09	0.35	1.03	1.88	2.99	4.34	12.92	0.67	2.01	3.61	5.57	7.88	21.83
Public debt (% GDP)	-0.98	-1.80	-2.62	-3.52	-4.45	-9.74	-1.38	-2.52	-3.71	-4.98	-6.32	-13.93	-2.25	-4.10	-6.07	-8.24	-10.52	-23.64



Macroeconomic Effects under Different Scenarios

	Scenario D						Scenario E					
	1	2	3	4	5	10	1	2	3	4	5	10
Output	0.41	-0.09	0.09	0.42	0.65	1.34	0.78	0.56	0.99	1.51	1.92	3.04
Consumption	-0.40	-0.58	-0.30	-0.10	0.03	0.30	-0.23	-0.29	0.12	0.44	0.64	1.17
Consumption (NLC)	-0.02	0.19	0.52	0.74	0.82	0.94	0.13	0.47	0.90	1.20	1.38	1.67
Consumption (LC)	-1.33	-2.66	-2.47	-2.24	-2.09	-1.35	-1.15	-2.30	-1.94	-1.57	-1.29	-0.14
Investments	-0.47	-0.66	-0.48	-0.13	0.27	2.49	-0.16	0.04	0.55	1.17	1.80	4.60
Employment	0.22	-0.14	-0.13	0.07	0.25	0.74	0.57	0.52	0.74	1.09	1.35	1.94
Real Wages	0.45	1.09	1.42	1.57	1.63	1.98	0.52	1.32	1.77	2.00	2.14	2.88
Terms of Trade	-1.68	-2.09	-2.34	-2.48	-2.57	-2.53	-1.98	-2.51	-2.89	-3.13	-3.31	-3.45
Net Foreign Assets (% GDP)	1.85	6.65	12.72	19.18	25.84	60.72	1.96	7.01	13.35	20.13	27.17	64.44
Public Debt (% GDP)	-1.79	-4.59	-9.14	-14.29	-19.64	-49.49	-2.17	-5.27	-10.18	-15.70	-21.45	-53.62



Conclusions

- After a prolonged period of slow growth and a severe confidence crisis, Italy has embarked on an ambitious reform package aimed at increasing supply potential, improving competitiveness, ensure fiscal sustainability and enhance confidence in government ability to service its debt.
- This paper takes stock of the recent provisions undertaken or still on the table and quantifies the potential effects on the Italian economy of different reform scenarios including a broad range of policy interventions and differing in the progress made in two policy areas: *liberalization-simplification* and *labor markets*.
- Policies aimed to enhance competition in goods market, simplify bureaucracy, increase labor supply and align wages to productivity trends are likely to generate sizable gains in output, consumption and employment and net foreign assets position already during the earlier phases of the implementation, and that most of these gains derive from labor market reforms.



Conclusions

- The positive effects on output and the improvement in employment are able to support fiscal consolidation also in the ex-ante budget neutral scenarios.
- As regards to the external imbalances, the external asset position improves as a result of the reforms which boost domestic competitiveness and increase exports.
- However, the fiscal austerity plan is likely to severely reduce the positive effects of the interventions, especially during the first years of reform process.
- In particular, liquidity-constraint households may incur transitional losses in consumption.
- Overall, our results clearly show that a stronger progress in implementing structural reforms is crucial to rein in the slowdown in the economic activity and the fall in consumption due to the fiscal consolidation package.



Caveats

- Some words of caution are needed since quantifying the impact of structural reforms on the main macrovariables is extremely difficult:
 - (i) all results have been generated through a model. The tight theoretical assumptions of QUEST impose limitations which must be taken into consideration when interpreting the results;
 - (ii) the time lags in reforms implementation, the cross-country spillovers and complementarities, the trade-offs between reforms in different domains and the effects of short-term economic fluctuations make it difficult to disentangle the effects of reforms undertaken from others determinants of performance;
 - (iii) the announced reform plans are fully credible and agents have perfect foresight, *but* there might be an initial lack of credibility and a problem of uncertainty about the effects of the reforms;
 - (iv) the political economy interactions between product and labor market interventions. More competition in product markets generates support for labor market deregulation;
 - (v) from theory to practice: simulation analysis for the NRP.



Quantifying the impact of product market reforms in the NRP 2012

Problems to be solved

- Model choice: OK
- How do we map the single policy intervention onto the model? (channels choice given the structure of the model) MORE DELICATE CHOICE
- Building the reform scenario: MORE DELICATE ISSUE
 - Size of the policy changes
 - Timing and pace of implementation (gradualism v. “Big Bang”)
- Evaluation of the simulation results



Quantifying the impact of product market reforms in the NRP 2012 : Mapping the reform packages onto the model

To evaluate the effects of competition-enhancing policy the following channels have been used (as in the paper)

- **Price markup** (measure of the degree of competition)
- **Entry costs** (measure of the regulatory burden and of the limitations on starting new business)
- **Administrative burden** (time spent with bureaucracy- overhead labor)



Quantifying the impact of product market reforms in the NRP 2012 : Mapping the reform packages onto the model

The economic logic of the implementation:

$$\text{Markup} = F(\text{number_of_firms})$$

- if number of firms $\uparrow \rightarrow$ markup \downarrow
- if fixed entry-costs \downarrow number for firms $\uparrow \rightarrow$ markup \downarrow
- If administrative burden \downarrow number of firms $\uparrow \rightarrow$ markup \downarrow

The *correct* model should embed endogenous markups, but standard DGE models have exogenous markups (i.e. monopolistic competition *à la* Dixit-Stiglitz).



Quantifying the impact of product market reforms in the NRP 2012 : Mapping the reform packages onto the model

Possible solution:

- Set exogenously the changes in the fixed costs
- Set exogenously the changes in the overhead labour (administrative burden indicator)
- Link the changes of the price markup to the changes in the fixed costs and in the overhead labour.

Two problems remain:

- What the size of each exogenously set changes?
- How to relate the changes in the markup to changes in the overhead labour and in the fixed costs?



Quantifying the impact of product market reforms in the NRP 2012 : Size of the policy changes

- Possible solution: use historical experience as a guide
- Implicit assumption when looking at past experience: the implementation of current reforms may yield to substantial benefits in terms of fostering competition as those experienced across Europe as a result of the wave of product market reforms undertaken over the late 1980s and 1990s.
- The sizes of shocks to relevant policy variables (markups, entry costs and overhead labour) have been chosen on the basis of the progress made in these areas of interventions across EU countries over the period 1986-2000, as estimated by Griffith and Harrison (2004, EC Economic Paper # 209), taking into account the impact that different reforms may have on competition.



Quantifying the impact of product market reforms in the NRP 2012 : Size of the policy changes

- Specifically, Griffith and Harrison (2004) consider a relationship between the product market reforms and the markup:

$$\text{Markup} = a_1 \times (\text{fixed entry costs indicator}) + a_2 \times (\text{administrative burden indicator}) + a_3 \times (\text{other variables})$$



Quantifying the impact of product market reforms in the NRP 2012 : Size of the policy changes

- Fixed entry costs «ease of starting a new business»
- Administrative burden «time spent with government bureaucracy»
- Fraser Institute, Index of Economic Freedom (2003), Global Competitiveness Report (survey on the business perception of regulation)
- NB: An increase in these indexes implies an improvement (range: 1-10); coverage of these indicators consistent with the period in which the wave of reforms took place in Italy; indexes strongly correlated to OECD indicators.

	1995	2000	Δ
ease of starting a new business	4.1	5.1	1
time spent with government bureaucracy	4.7	6.1	1.4



Quantifying the impact of product market reforms in the NRP 2012 : Size of the policy changes

Response of the markup to variation in the fixed entry costs (parameter **a1**)=-0.021

Response of the markup to variation in the admin burden (parameter **a2**)=-0.01

Period 1995 - 2000:

- Δ index '*ease of starting new business*' =1
- Δ index '*time spent with government bureaucracy*' =1.4

Given Griffith and Harrison (2004, Table 3) estimates for **a1**, **a2**:

- $\Delta \text{markup} = (-0.021 \times 1 - 0.01 \times 1.4) \times q = -1.8 \text{ pp} \quad (q=0.5)$



Quantifying the impact of product market reforms in the NRP 2012 : Size of the policy changes

N.B: q ($=0.5$) is the weight associated to variables changes to avoid inserting the policy changes twice into the model.

Taking stock, the variations of the relevant variables of the model :

- Price markup: **-1.8 pp**
- Fixed entry cost: **-12%** $= -[(1-q) \times (1/4.1)] \%$
- Admin burden (overhead labour): **-15%** $= -[(1-q) \times (1.4/4.7)] \%$



Quantifying the impact of product market reforms in the NRP 2012 : Timing and pace of implementation

- Immediate implementation
- Fully credible policy reform plan
- Degree of gradualism: 10 years



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Quantifying the impact of product market reforms in the NRP 2012 : Results

TABLE 3: MACROECONOMIC EFFECTS OF THE STRUCTURAL REFORM PACKAGE (D.L. 1/2012 & D.L. 5/2012)
(percentage deviations from the steady state)

	2012	2013	2014	2015	2020
GDP	0.2	0.4	0.7	0.9	2.4
Consumption	0.1	0.1	0.2	0.3	1.1
Investments	0.5	1.1	1.6	2.0	3.9
Employment	0.2	0.2	0.2	0.1	0.1

Source: Elaborations with QUEST III - Italy (European Commission).

