

Labour incomes and employment GEL simulations of policy options

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Abstract

This paper discusses the macroeconomic effects of a change in the labour share of income based on the simulations from the Global Economic Linkages (GEL), a DSGE model developed at the ILO International Institute for Labour Studies. The analysis distinguishes between technology, firms' market power and workers' bargaining power as underlying drivers of a change in the labour share. While technological progress raises workers' income despite a possible fall in the labour share, an increase in firms' market power is detrimental not only to workers but also to investment and growth. A fall in labour share due to lower workers' bargaining power increases competitiveness and employment in the home country but at the cost of higher unemployment abroad ("beggar-thy-neighbour"). More generally, a decrease in workers' bargaining power widens the effects of an economic crisis while setting a minimum wage weakens its impact. These results permit to assess different policy options to sustain growth and employment.

Keywords: Inequality, labour share, search, matching, crisis.

JEL CLASSIFICATION SYSTEM: E24, E32, E62.

Introduction

This paper discusses the macroeconomic effects of a change in the labour share based on the IILS “Global Economic Linkages” (GEL) model. The results presented below are directly relevant to the analysis of the causes of the current job crisis in advanced economies and the assessment of the policy responses put in place in a majority of them.

In a number of countries, labour income share decreased significantly in the years before the subprime crisis while households’ debt increases. Whether these changes in income distribution can be regarded as the cause of the crisis is a matter of debate. However, it is clear that they accompanied the development of the subprime crisis and amplified their effect on the real economy.

A decrease in labour income is also recommended as the appropriate policy to boost exports and increase employment in Eurozone countries that are currently facing the double challenge of high sovereign debt and low competitiveness. This policy aims to weaken collective bargaining and to soften employment protection legislation.

The report presents the key features of the GEL model (Section 1) and discusses the macroeconomic effects of a change in the labour share due to changes in technology (2), monopoly power in the product market (3), bargaining power in the labour market (4) and in the minimum wage (5) as well as the effects on public debt (6).

I. The Global Economic Linkages (GEL)

The GEL model belongs to the class of *dynamic stochastic general equilibrium* (DSGE) models. These models share the property that, under a set of hypotheses about the behaviours of the agents and the technology of production, a unique and stable *equilibrium* can be achieved in all markets simultaneously, i.e.: the equilibrium is general. Dynamic means that all individual agents (households, workers and firms) take their decisions based not only on the present configuration of the economy but also on all its future configurations. Importantly, the GEL model assumes rational expectations, which means that agents do not make any systematic errors when they make forecasts about all future configurations.¹ Because of the rational expectations hypothesis, the economy depicted by the DSGE models would always be in its steady state equilibrium unless some unforeseen event, i.e.: a shock, was to perturb it. A shock, either temporary or permanent, would make the agents adjust their behaviour and trigger changes in the economic variables, which, otherwise, would remain constant over time. This is why this class of models are labelled *stochastic*.

Thus, the GEL model solves for equilibrium in all current and future periods simultaneously. Since the dynamic nature of the model requires involved solution methods, the behaviour of the agents and the characteristics of the markets are modelled in a way that is complex enough to capture their most important features while sufficiently simple to permit the equilibrium to be found.

The GEL comprises three sets of individual agents (households, workers and firms) who sell and buy four sets of goods and services (consumption goods, capital goods, capital services and labour services) on four different markets (one for each good or service) in two countries (home and abroad). In addition, the GEL also comprises two sets of institutional agents: the government and the central bank.

¹ The assumption of rational expectations is frequently criticized as it assumes that agents perform complicated optimization calculations. However, there is no consensus on how non-rational expectations are to be modelled. Furthermore, the presence of systematic forecast errors poses the question of why these are not eliminated.

Individual agents behave as to maximise their objectives, which are specific to each agent's type: the utility from consumption for households, profits for firms and labour income for workers. Institutional agents, however, are not given any specific objective in the GEL. Their behaviour is either discretionary, in the case of the government, or it follows a pre-set rule, in the case of the central bank.

The GEL comprises two groups of households, which differ in relation to the sources of their income. The first group (unconstrained households) receives labour income, returns from capital and profits. The second group (credit-constrained households) does not have access to the financial market and earns exclusively labour income and unemployment benefits. This distinction reflects the empirical observation that, even in financially developed economies, a large majority of the population does not hold stocks².

Unconstrained households allocate their income between consumption and saving in order to maximise their utility. Through their saving, they can smooth consumption over time: they can consume more than they earn when their income is low and less than they earn when their income is high.

Unconstrained households can save by buying public bonds in exchange of an interest rate set by the central bank. In addition, they can save by buying investment goods, which they rent out to firms in exchange of a rental price. Arbitrage equalizes the return on bonds with the net return on capital³, thereby determining its rental price.

Households, therefore, own the stock of capital of the economy, i.e.: the net value of all investment goods purchased in the past. They also make investment, i.e.: buy more investment goods, in response to change in the rental price of capital. In the short-run, however, they cannot freely adjust the stock of capital to its desired level because of adjustment costs, e.g.: the quicker the new capital is installed, the more costly it is to install it. Adjustment costs reflect the fact that producing and installing new capital goods takes time and divert resources from alternative uses, e.g.: producing consumption goods.

Unlike unconstrained households, credit-constrained households cannot transfer consumption over time because they have no access to the financial market. The presence of credit-constrained households establishes a link between income distribution and the level of consumption in an economy. In fact, a decrease in the labour income share would not affect the consumption decision of the unconstrained households, who would see the decrease in labour income compensated by an increase in capital income and profits. However, this would not be the case for credit-constrained households, who would have to cut their consumption by the same amount as the reduction in their income⁴.

Both consumption and investment goods are supplied in monopolistic markets. Each firm sets the level and the price of its output in order to maximise profits, taking into account the price and the level of output of all other firms as well as the consumers' demand. Prices are set according to a mark-up on the production costs and firms earn a profit equal to the difference between the value of their sales and the remuneration of labour and capital.

² In reality, even if most people do not hold stocks, they do have savings accounts. Nonetheless, their possibility to smooth consumption is severely limited by borrowing constraints. The hypothesis of credit-constrained households permits to capture this feature in a way that is easier to model in a DSGE.

³ The net return on capital is determined by Tobin's q , which is the gross return of capital net of depreciation plus the value of already installed capital in face of installation costs.

⁴ There is a large literature on credit-constrained, also known as rule of thumb, households. Rule of thumb households has been initially developed to discuss fiscal policy as in Gali et al. (2007) and Cogan et al. (2010). Bosca et al. (2011) recently have combined rule of thumb households and search and matching. They underline that the combination of the two mechanisms better accounts for the characteristics of the US labour market. The literature on rule of thumb households has not addressed the question of bargaining shocks with the exception of Kumhof and Ranciere (2010).

Following the New Keynesian literature, the GEL assumes that not all firms adjust their price to the optimal level due to menu costs. As a result of “sticky prices”, the price mark-up and the level of profits vary over the business cycle. For instance, a decrease in production costs would not be fully compensated by a decrease in price, which would lead to an increase in the mark-up, the value of sales and the level of profits. As an increase in profits implies that a smaller share of the value of sales is available to remunerate the production factors (labour and capital), sticky prices provides an explanation for cyclical changes in the labour income shares in the GEL.

On the production side, firms produce consumption and investment goods using capital and labour. In return, they pay a rental price to the providers of capital and a wage rate to the workers. There is only one type of capital and one type of labour, so that the rental price and the wage rate are unique. This means that there is no income distribution across workers but only between labour and capital.

The real wage rate is set as a result of a bargaining between workers and firms. While workers want to maximize their labour income firms want to maximize their profits. Therefore, workers take into account their alternative value to work, i.e.: unemployment benefits, and the future value of being employed or unemployed. Firms consider the marginal productivity of a worker as well as the future value of having a worker⁵. The real wage that workers are able to negotiate is increasing with their bargaining power.

The labour market is modelled following the search and matching framework, which is standard in modern macroeconomics. In each period, some workers quit their jobs and look for a new job while some firms open vacancies to find new workers. Vacancies, however, are not immediately filled because the characteristics of the workers searching for a job do not necessarily match the requirement of the vacancies⁶. The simultaneous presence of unfilled vacancies and searching workers implies the occurrence of involuntary unemployment even in equilibrium.

The optimal mix of labour and capital depends on their relative productivity and their relative price. If the productivity of labour decreases and/or its cost increases, firms use less labour. The effects on the use of capital would depend on how easily capital can substitute for labour, i.e.: on the elasticity of substitution of the production function. When capital and labour are complements– more labour requires more capital– a decrease in the productivity of labour or an increase in its cost would reduce the use of both labour and capital. However, the decrease in capital would be larger or smaller than the decrease in labour depending on the value of the elasticity of substitution.

The GEL model uses a low elasticity of substitution in the short-to medium run analysis presented in this report. In the short-run, capital and labour are complement: it takes time to change the whole production process, so that the capital-labour ratio is not very flexible. In the long-run, however, production technology and capital can be changed to allow any capital-labour ratio that is optimal given the factor prices.

As the focus of study of the GEL model lies on the macroeconomic effects of changes in the income distribution, financial markets are modelled frictionless, efficiently bringing together the supply and the demand for loans.

The GEL consists of two economies - “home” and “foreign”– which trade goods and financial assets. Domestically produced goods are imperfect substitutes for those produced abroad and thus will be traded. An increase in the price of domestically produced goods, given the price of foreign goods, lowers its demand both at home and abroad.

⁵ One may think of the bargaining solution as the intersection between a labour supply curve and a labour demand curve, although these curves cannot be depicted in a simple diagram due to the dynamic nature of the process.

⁶ As there is one type of labour only, it is assumed that differences in workers characteristics do not affect labour productivity and, therefore, wage.

The GEL model assumes no capital controls. Investors compare domestic and foreign returns on assets, taking into account expected exchange rate changes. As a consequence of perfect capital mobility, the nominal exchange rate is determined by the interest parity condition⁷.

In the short-run, current account imbalances are financed by international asset movements (the capital account), thus affecting a country's net foreign asset position. In the long-run, however, the real exchange rate endogenously adjusts to equalize relative demand and supply of domestic and foreign goods. In a fixed exchange rate regime (or a currency union) the adjustment occurs through relative price movements only while in a fixed exchange regime nominal interest rate would adjust as well.

Finally, public institutions do play a role in the GEL model. The government pays unemployment benefits, buys consumption and investment goods and pays interest on debt, financing these expenditures by levying taxes on consumption and/or labour or by issuing public bonds. The financing mix is an independent choice of the government, conditional on the long-term sustainability of debt. Throughout this report, short term deficits/surpluses are assumed to be financed via borrowing/saving.

The central bank sets the nominal interest rate responding to the deviations of inflation and output from a pre-set target. This behaviour is well-documented empirically and is known as the Taylor rule.

In a fixed exchange rate regime, however, the central bank of the home country has to renounce to an independent monetary policy and has to set the interest rate equal to the interest rate set by the foreign central bank, which in turn follows the Taylor rule. In a currency union, a common central bank sets the interest rate for all members by weighting their respective inflation and output gaps according to their country's size.

In this setting, four "shocks" may affect the income share of labour:

- an increase in productivity;
- an increase in the monopoly power of firms;
- an increase in the bargaining power of workers;
- a change in labour market protection.

II. A change in technology

Figure 1 shows the impact of a permanent shock in technology that increases either labour productivity (dashed line) or capital productivity (solid line) when capital and labour are complements⁸. In both cases, employment initially falls as firms see their productivity rise and are able to produce the same level of output with less labour. However, higher productivity entails lower production costs which are translated into lower prices. In addition, households increase their consumption as to adjust to the increase in the output that higher productivity makes possible in the long run. Real wage, in particular, increases because labour productivity has increased. As a result of these different changes, demand increases and so does output and employment.

Figure 1 shows that, when capital and labour are complements, an increase in capital productivity raises employment more than an increase in labour productivity. This is so because, when capital productivity increases, firms require more labour and hire more workers. Similarly, when labour productivity rises, firms also require more capital and increase investment.

⁷ The condition states that any difference in the nominal interest rate between the home and the foreign country is compensated by an opposite change, current or expected, in the exchange rate.

⁸ The size of the shocks has been selected as to lead a similar response in output in order to facilitate a comparison of the shock's effects.

The above results also apply when labour and capital are substitutes. An increase in either labour or capital productivity increases employment and labour income, i.e.: wage times employment. However, the wages share, i.e.: the ratio of labour income to output, would increase when labour productivity increase and decrease when capital productivity increases. The reason is that, as the productivity of one input increase, its contribution to output increases as well while the contribution of the other input decrease.

III. A decrease in firms' monopoly power in the product market

A decrease in the market power of firms, i.e.: in their mark-up over production costs, decreases their profits and induces the income shares of capital and labour. A higher income share of capital implies either a higher return on or a lower marginal productivity of capital. As the return on capital must be equal to the interest rate set by the central bank, firms increase their capital stock in order to reduce its productivity⁹. Similarly, a higher income share of labour implies either a higher real wage or a lower marginal productivity of labour. Both adjustments would lead to an increase in employment. On the one hand, real wages are set in a bargaining between firms and workers, who demand a higher wage when employment increases. On the others, firms can raise employment, thereby lowering labour productivity.

Figure 2 shows that a decrease in the monopoly power of firms in the product market¹⁰ raises investment, consumption and output, which lead to an increase in employment. In accordance with standard economic theory, monopoly power reduces welfare and should be restricted by anti-trust regulation. Consequently, raising the labour share by restricting market power of firms yields beneficial results.

IV. An increase in worker's bargaining power on the labour market

The effects of a change in the labour share due to an increase in worker's bargaining power are presented in Figures 3, 4 and 5¹¹. Workers and firms bargain over the difference between the maximum wage firms are willing to pay and the minimum wage workers are willing to accept. Therefore, a rise in the bargaining power of workers results into a rise in the real wage¹².

This section investigates the three main effects of a rise in real wages due to higher bargaining power. The first effect is the supply side effect of lowered labour demand, the dominant argument in the last decades. This effect lowers output and employment. The second effect is an increase in aggregate demand due to raised labour incomes. This effect has been ignored by supply side economists in the past but is taken into account by the GEL model. The demand effect can indeed overturn the supply effect. The third effect relates to the lost export competitiveness stemming from higher real wages. This loss in demand is stronger the more an economy exports. However, trading partners gain competitiveness and exports, thus positively affecting them.

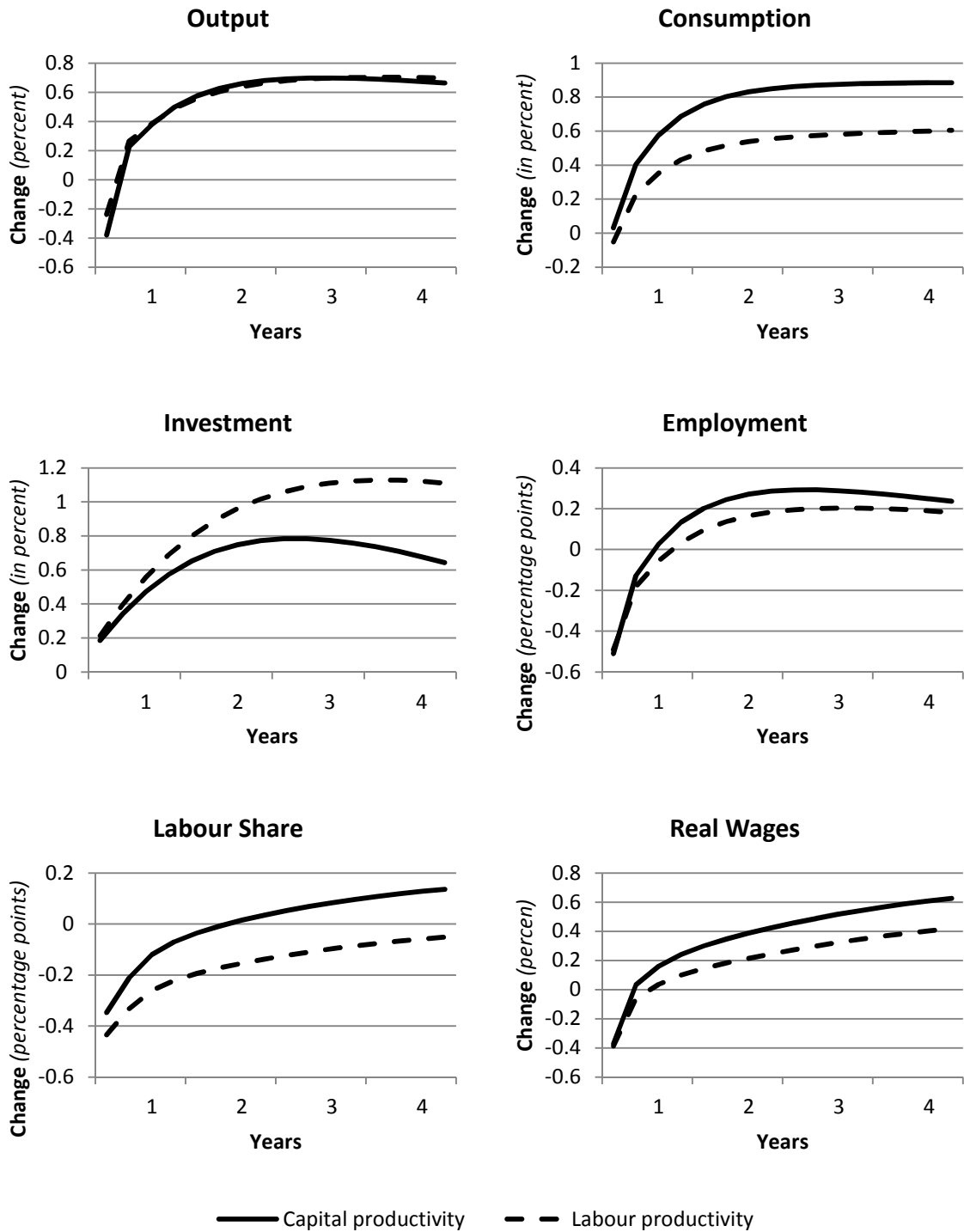
⁹ As in standard economics textbooks, the marginal productivity of capital and labour are decreasing.

¹⁰ The figure is based on a decrease in the price mark-up on costs by 1%. A lower mark-up then increases exponentially with a half-life time of around 2 years, meaning that after 2 years the remaining decrease in mark-up stands at around 0.5%.

¹¹ Bargaining power rises by 2.5% initially, and then starts to decrease again. It takes around 2 years until the workers have lost half of their gained bargaining power, meaning that after two years their bargaining power is still 1.25% higher.

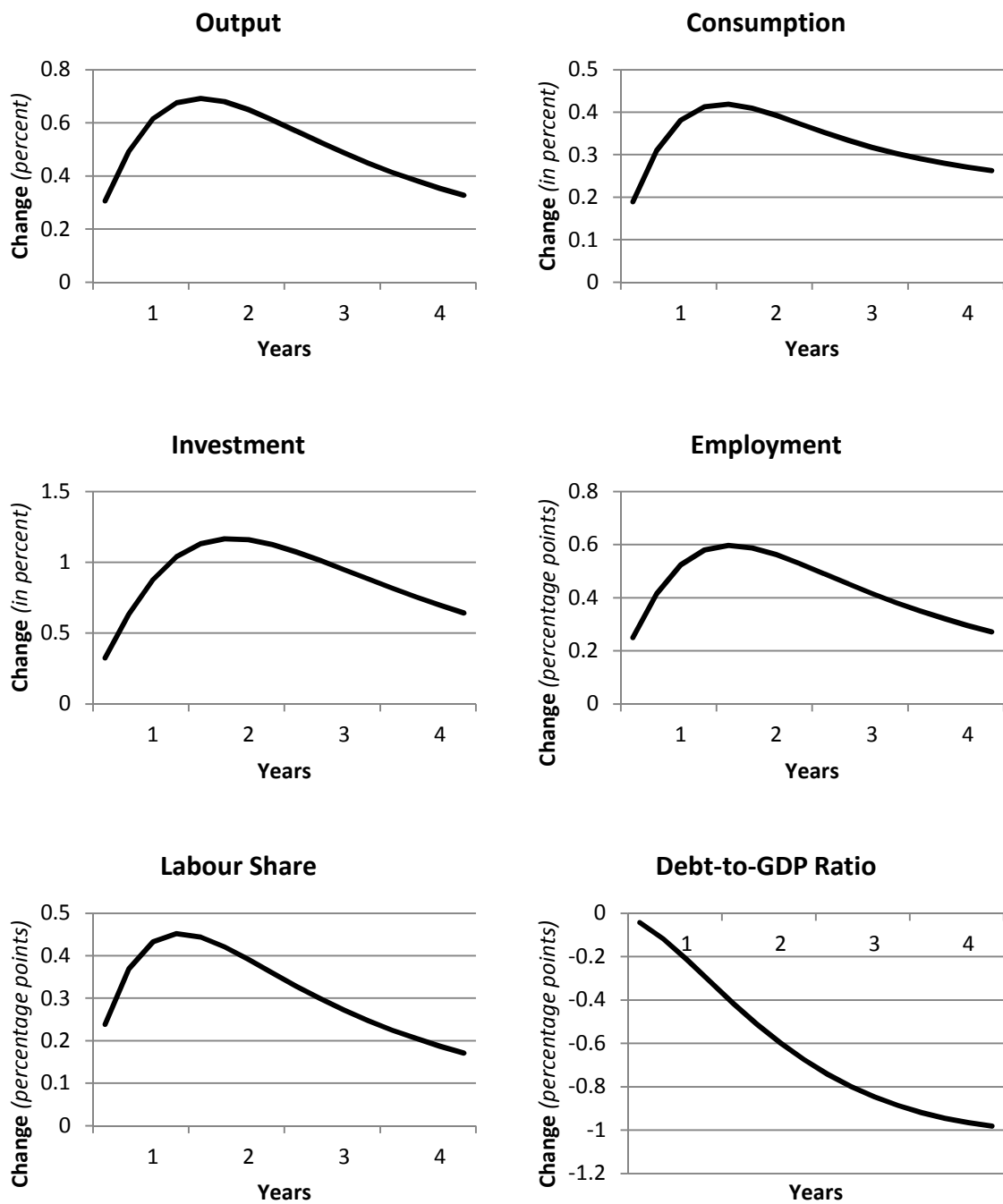
¹² Importantly, zero bargaining power for workers does not imply a zero wage, but a wage equal to their outside option of not working, meaning unemployment benefits.

Figure 1: An increase in productivity due to a technology shock



Source: INST, GEL model.

Figure 2: A decrease in firm's mark-up in the product market



Source: ILS, GEL model.

Figure 3 shows the effects of a rise in the workers' bargaining power in a closed economy. The solid line shows the simulations based on a standard New Keynesian model with search and matching in the labour market, while the dashed line shows those of the GEL model.¹³

In contrast to the GEL model, the standard model does not feature credit-constrained consumers, so that a change in the income distribution has no effects on the aggregate demand.

In the standard model (solid line), a rise in bargaining power leads to an increase in the labour costs, which translate into a decrease in employment per unit of output (because labour is more expensive) and to an increase in prices. As a result, demand decreases and so do investment and output. Due to lowered economic activity, tax revenues decrease as well, which, in turn, raises government debt. This is the supply side argument for lowering bargaining power.

In the GEL model (dashed line), a rise in the workers' bargaining power initially has a positive impact on employment. Because of the presence of credit-constrained households, an increase in the labour share of income leads to an increase in consumption. Initially, such an increase raises output and employment. However, this effect is only temporary. The increase in the consumption of the credit-constrained households would be eventually more than compensated by the decrease in consumption of the other households, who see their income decrease due to the lower share of income going to capital.

Figure 4 shows the effects of a rise in the workers' bargaining power in a small open economy that exports a significant share of its output under flexible exchange rates. Being small, the economy can export or import any value of goods without affecting the world market conditions¹⁴.

A rise in the workers' bargaining power leads to an increase in wages. On the one hand, higher wages raise domestic demand; on the others, they raise domestic prices and decrease exports. Figure 4 shows that the increase in labour demand due to the increase in domestic demand is more than compensated by the decrease in labour demand driven by lower exports. As a result, total employment would fall. The decrease depends on the share of exports in total output: the higher this share, the larger the negative effect on employment.

Figure 5 shows the effects of a rise in the workers' bargaining power in a large open economy under flexible exchange rates. As the economy is large, changes in exports or imports would have an impact on the world market conditions¹⁵. As in the case of a small open economy, a rise in the workers' bargaining power leads to a decrease in employment through higher wages and lower exports. In contrast, the foreign country experiences an increase in employment and output since its export demand increases for two reasons. First, its competitiveness increases due to higher wages in the domestic economy. Second, its export demand increases due to higher disposable incomes and demand in the domestic economy.

¹³The models are differentiated by their calibration. The GEL calibration includes rule of thumb households $\sigma_c = 0.5$ and partial participation of optimizing households in the labour market $v = 0.5$. The production function has low degree of substitution between labour and capital $\zeta = 0.4$. The standard New Keynesian calibration assumes away rule of thumb households $\sigma_c = 1$, and the production function is Cobb-Douglas $\zeta = 1$. Remaining parameters are identical to the parameters of the GEL model.

¹⁴ A country like the Netherlands provides a good example of a small open economy.

¹⁵ A country like Germany provides a good example of a large open economy.

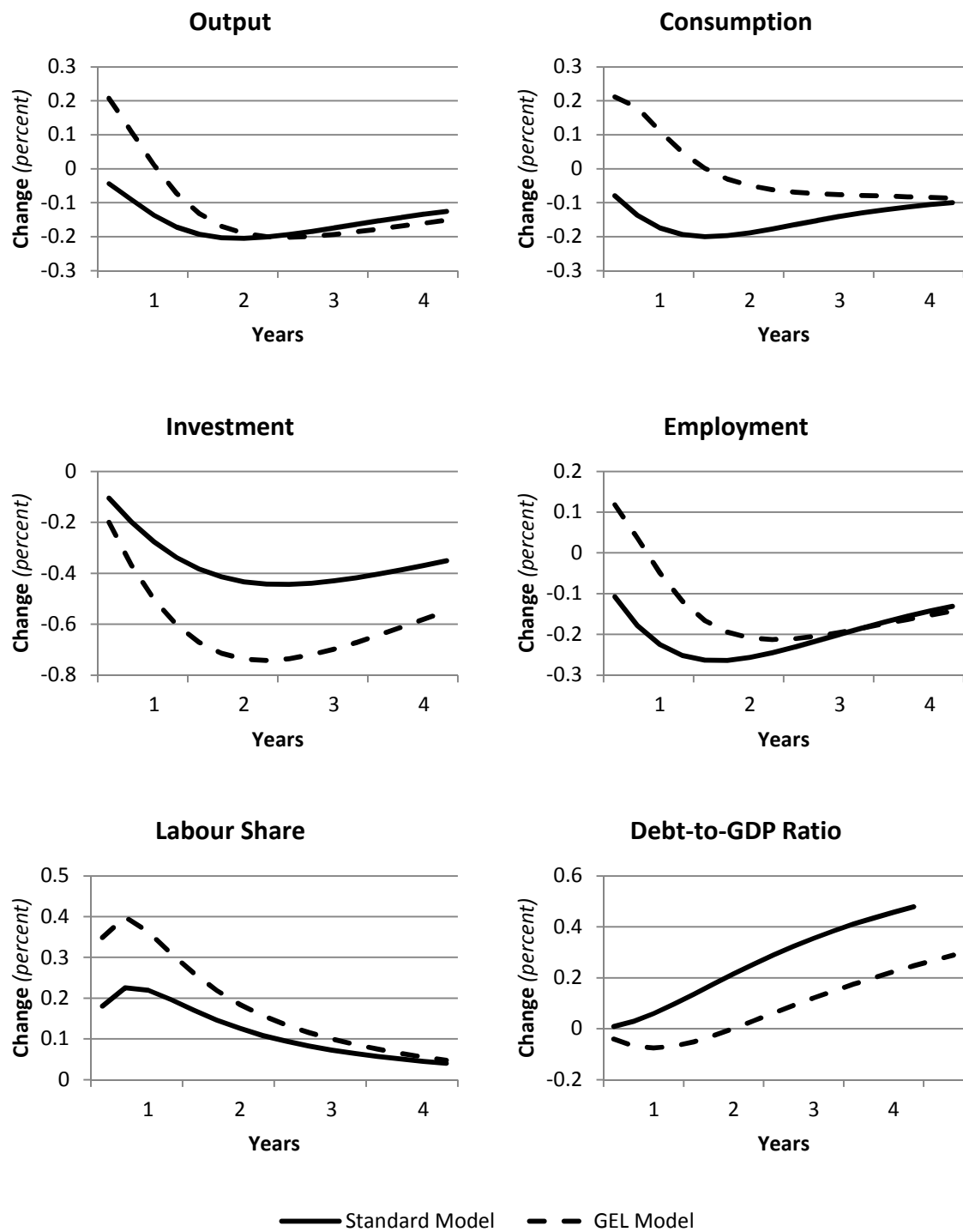
The mechanisms described above, labour demand, aggregate demand and competitiveness, are equally relevant when bargaining power of workers falls. In such a case, a large open economy would experience an increase in employment and output at the cost of falling employment in the foreign country. This is called a “beggar-thy-neighbour” effect: the domestic country is exporting unemployment to the foreign one. The existence of the “beggar thy neighbour” effect could cause a race to the bottom: falling bargaining power in all countries in order not to lose competitiveness. Importantly, the world economy is a closed economy, so that competitiveness effects would cancel each other, while the loss of wage income in all countries causes a general loss of aggregate demand.

The above results hold under “normal” economic conditions, i.e.: a situation where all agents can implement their optimal decisions. However, they do not remain valid when the economy is going through an economic crisis, i.e.: a phase characterised by low growth and low nominal interest rates. In such a case, firms reduce their prices in an attempt to raise demand. However, as nominal interest rates are low and cannot become negative, a decrease in prices implies an increase in real interest rates¹⁶. Such an increase reduces consumption, investment and employment and deepens the downward spiral of the economy.

Figure 6 shows an increase in workers’ bargaining power during times of economic crisis in a closed economy. The positive demand effect due to the rise in the labour income share is amplified in times of low growth and low nominal interest rates. Unemployment falls, while output increases. More importantly, investment does not fall in response to higher wages. Therefore, the negative aggregate supply effects are overturned by the positive demand effects. If the latter effects are large enough, employment would increase even the case of an open economy considered above in Figures 4 and 5. Finally, government debt also decreases due to increased economic activity.

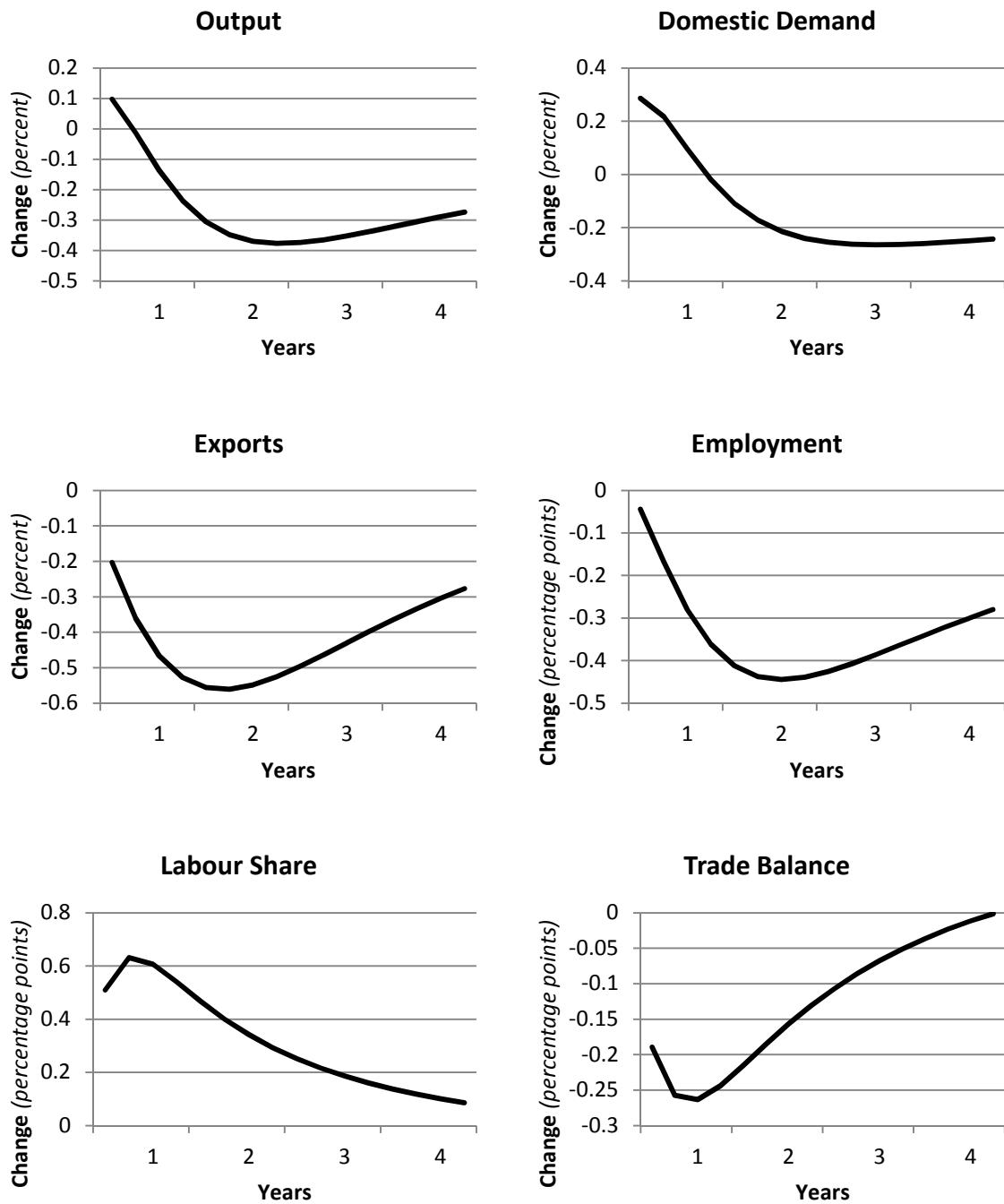
¹⁶ A situation commonly known as a “liquidity trap”.

Figure 3: An increase in workers' bargaining power in a closed economy



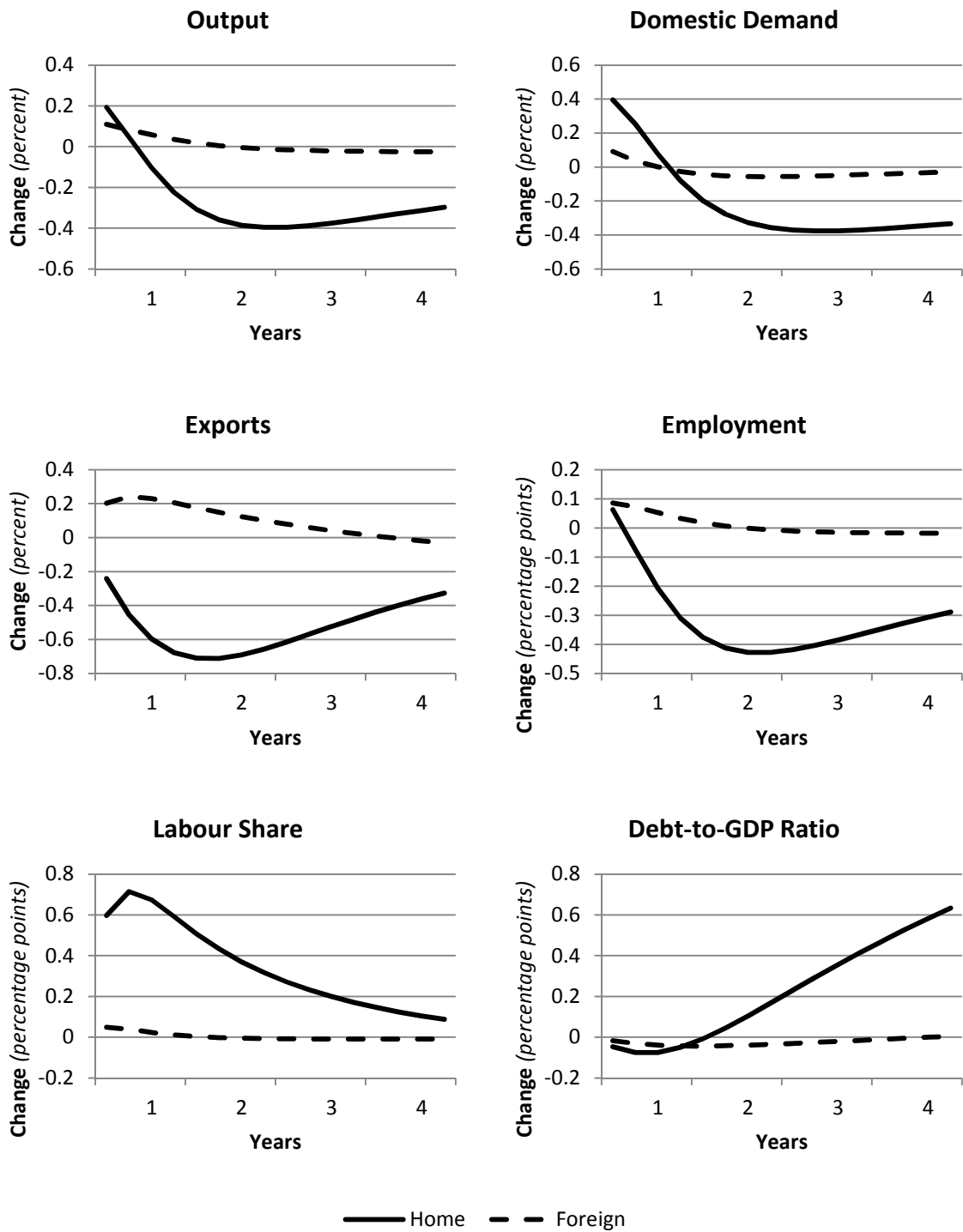
Source: INST, GEL model.

Figure 4: An increase in workers' bargaining power in a small open economy



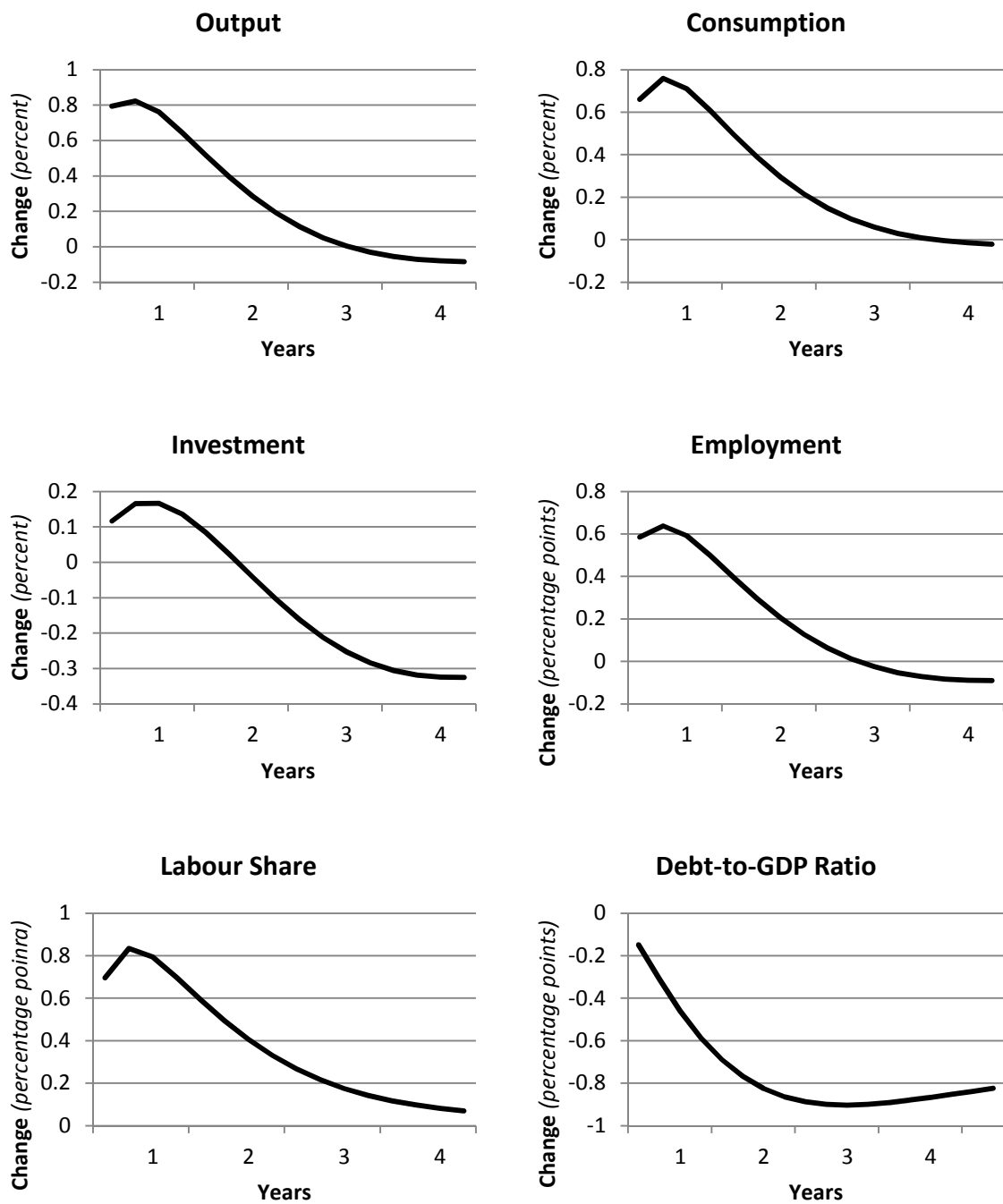
Source: INST, GEL model.

Figure 5: An increase in workers' bargaining power in a large open economy



Source: INST, GEL model.

Figure 6: An increase in workers' bargaining power during an economic crisis



Source: INST, GEL model.

V. The introduction of a minimum wage

This section analyses the role of labour market institutions as a tool to support wages and to increase employment and growth. This role becomes extremely important in times of crisis when, as discussed in the previous section, the monetary policy is unable to stimulate aggregate demand.

The minimum wage is implemented as a lower bound on the real wage in the GEL model, below which it is not allowed to fall in times of adverse labour market conditions.¹⁷ Therefore, the GEL model captures the income stabilizing effect of a minimum wage in downturns by preventing wages from falling too far. It does not investigate the long-term effect of raising the minimum wage for low-skilled low-wage earners, as the GEL model considers only one type of worker.

Figure 7 shows the effect of a real minimum wage when the economy faces a fall in consumer and investor confidence, thus leading to a fall in consumption and investment demand¹⁸. Supporting labour income through a minimum wage (dashed line) has a moderate but positive effect on output and employment through a positive impact on consumption demand.

In times of crisis, when nominal interest rates are close to zero, the support of labour incomes through labour market institutions like a minimum wage becomes a vital instrument to stimulate the economy. Figure 8 shows that a minimum wage, by setting a lower floor to the decrease in labour income, support aggregate demand and leads to better employment outcomes.

The transmission channel going from labour income to aggregate demand modifies the traditional views on minimum wage. In a standard New-Keynesian model, the minimum wage is regarded as an obstacle to the downward adjustment in real wages. This, in turn, hampers the adjustment in the labour demand and amplifies business cycle fluctuations. In contrast, in the GEL model the minimum wage sets a lower floor on labour income, which sustains consumption and aggregate demand. The direct negative effect of the minimum wage on labour demand is more than compensated by its positive impact on aggregate demand.

¹⁷ The real wage is allowed to fall by 0.5%, then it is restricted from falling further. It is modelled in a similar way than the lower zero bound in monetary policy. The actual wage is the maximum between the wage rule and the minimum wage.

¹⁸ The fall in consumption and investment demand lowers output by 1% in normal times and by 4% in crisis times. The fall is modelled as a temporary shock with a half-life time of 2 years, meaning that after two years, half of the lost consumer and investor confidence is restored.

Figure 7: The effects of a minimum wage in normal times

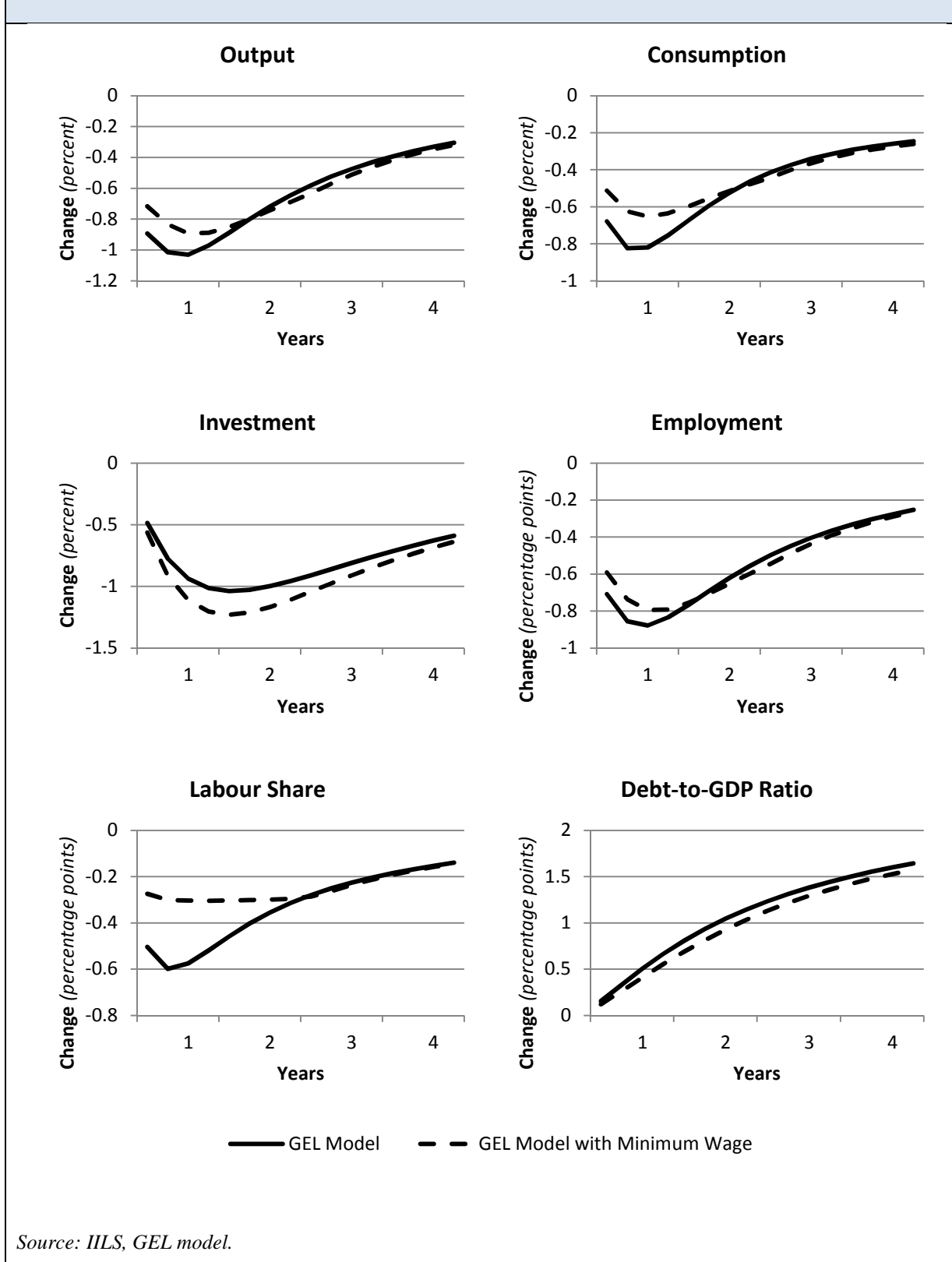
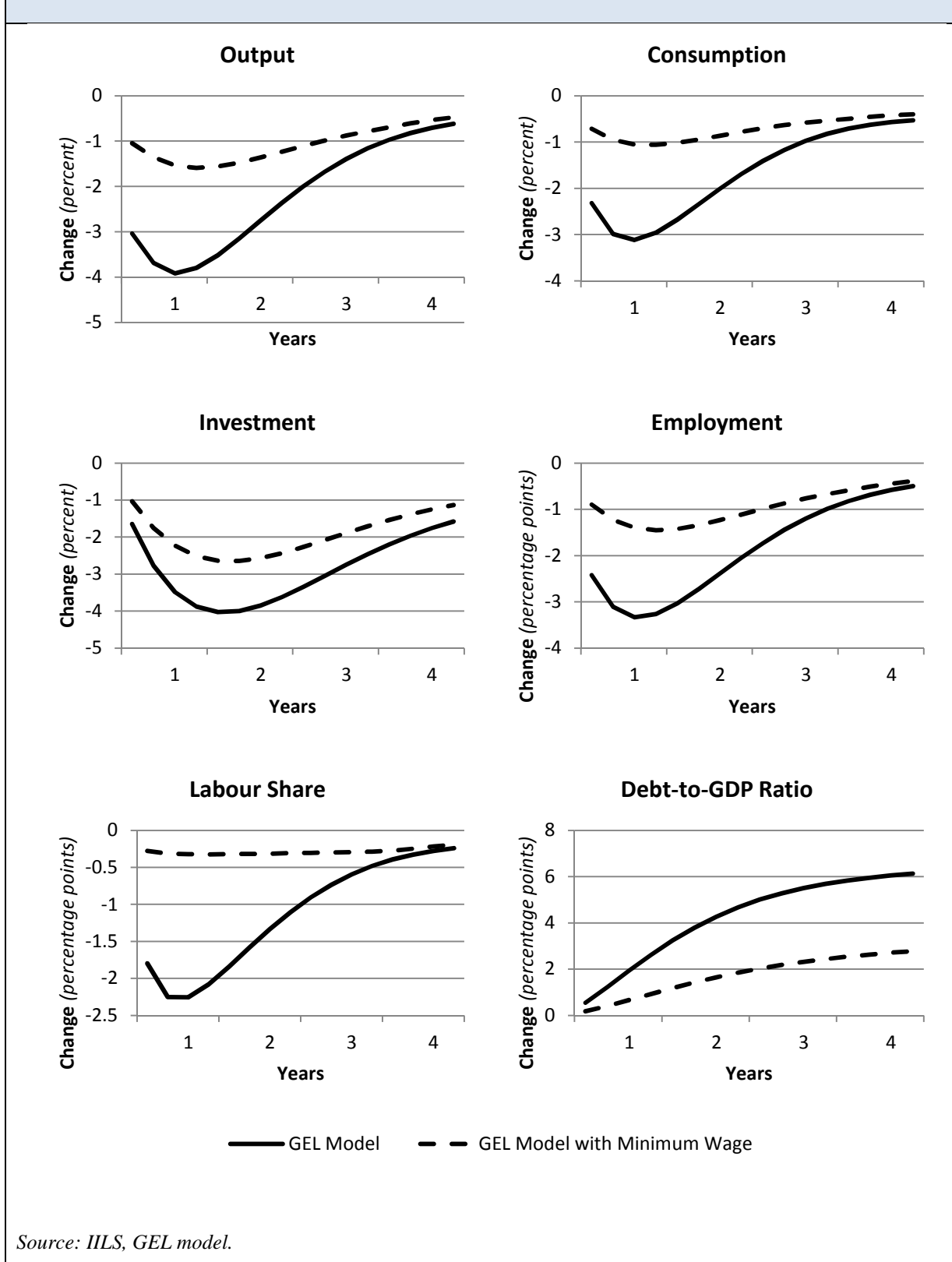


Figure 8: The effects of a minimum wage during a crisis



VI. Effects on the fiscal balance

The report has discussed a number of potential causes for a change in labour income share, under different macroeconomic environments. This section points out the implications for the fiscal balance.

Labour income taxes represent an important part of a government's tax base. The tax revenue is determined by the tax rate, the real wage and employment. When a fall in real wages is not compensated by a rise in employment, revenues from labour income taxes would decrease. In addition, a change in labour income can have secondary effects on indirect tax revenue, e.g.: VAT. When consumption falls in response to a decrease in labour income, indirect tax revenue also falls, with a negative effect on the fiscal balance.

Given a certain level of spending, technology progress would always increase growth and improve the fiscal balance. In contrast, the fiscal balance would deteriorate when the fall in the labour income share is due to an increase in monopoly power. In this case, real wages, employment and consumption fall, thus eroding the tax base.

The impact on the fiscal balance of a fall in the workers' bargaining power is more diverse. When an economy can substitute lower domestic demand with higher exports, the fall in wages is more than compensated by a rise in employment, thus increasing labour tax revenue. Nevertheless, falling domestic demand causes a fall in indirect tax revenue. In addition, the fiscal balance of the foreign country would worsen if the workers' bargaining power occurs in a large economy.

The fiscal balance would also deteriorate when labour incomes fall in times of economic crisis. Finally, Figures 7 and 8 show that policies supporting labour incomes also release pressures on fiscal balances. Higher consumption, employment and real wages translate to higher tax revenue.

Conclusions

Labour shares play a key role in economic growth. On the one hand, changes in the labour share are the results of the dynamics of wages, employment and productivity growth. On the other, they affect this dynamics by providing growth opportunities through higher domestic demand.

The simulations presented in the paper, based on the Global Linkages Model (GEL) model, provide support for a different policy approach. An increase in labour shares, via more competitive product markets, more effective labour market institutions and international coordination in wage setting, would foster employment growth while avoiding a spiral of competitive wage reductions and slow demand.

This wage-led approach is particularly needed to exit the current crisis, as investments are constrained by low credit and uncertainty about market prospect. It would also help to reduce government debt.

Bibliography

Boscá, J.E.; Ferri, J.; Doménech, R. 2001. “Search, Nash bargaining and rule of thumb consumers”, in *European Economic Review*, Vol. 55, No. 7, pp. 927–942.

Galí, J.; López-Salido, J.D.; Vallés, J. 2007. « Understanding the effects of government spending on consumption”, in *Journal of the European Economic Association*, Vol. 5, No. 1, pp. 227–270.

Gertler, M.; Trigari, A. 2009. “Unemployment fluctuations with staggered Nash wage bargaining”, in *Journal of Political Economy*, Vol. 117, No. 1, pp. 38–86.

Kumhof, M.; Ranciere, R. 2010. *Inequality, leverage and crises*. IMF Working Papers 10/268.

Sala, L.; Soderstrom, U.; Trigari, A. 2008. “Monetary policy under uncertainty in an estimated model with labor market frictions”, in *Journal of Monetary Economics*, Vol. 55, No. 5, pp. 983–1006.

Shimer, R. 2005. “The cyclical behavior of equilibrium unemployment and vacancies”, in *American Economic Review*, Vol. 95, No. 1, pp. 25–49.

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