The economics of job creation interventions in South Africa

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Background

▶ *Fiscal Policy and Jobs* involves exploring interaction between fiscal policy and unemployment, developing a dynamic economic model in which unemployment can arise but can be mitigated by public spending increases

▶ *Assessment of policy?* Depends on trade-offs between debt finance and future taxes, distribution, nature of services and long term fiscal policy goals

Grants and Other	Other Interventions
Expanded Public Works Program and CWPs	Direct job creation
Jobs Fund, Tax Breaks, DTI etc	Enhanced job search and employability
Wage Subsidy	Support for self employment
Investing in Infrastructure	Stabilising income

LONG AND SHORTER HORIZON TRADE-OFFS

▸ Emphasis on long-term benefits of saving relative to spending in normal times

  ▸ Higher savings → more that can be invested in productive capital → increasing the economy's capacity to produce in future

  ▸ When resources are unused, increased private and public spending would employ those resources and raise economy's current production

  ▸ Fiscal policies that promote long term growth may have little short-term effects on spending

▸ Yet, policies that boost demand for goods and services in short term tend to increase budget deficits and government debt, which reduces capital and thus slows long term growth

I. The Modelling Approach

MODEL

- Dynamic Computable General Equilibrium Model based on PEP 1-t standard model

- 25 activities and 54 commodities

- Disaggregation of the labour market according to the occupations instead of skills levels, using StatsSA data for 2005

- Unemployment for each labour category. Unions are represented in the modelling of unemployment through fixed minimum wages for each type of labour category

MODEL

- 3 broad types of labour:
  - Skilled :
    - Legislators, senior officials and managers
    - Professional
    - Technicians and associate professionals
  - Semi-skilled :
    - Clerks
    - Service workers and shop and market sales workers
    - Skilled agricultural and fishery workers
    - Craft and related trade workers
    - Plant and machine operators and assemblers
  - Unskilled:
    - Elementary occupations
    - Domestic workers
    - Unspecified workers

MODEL
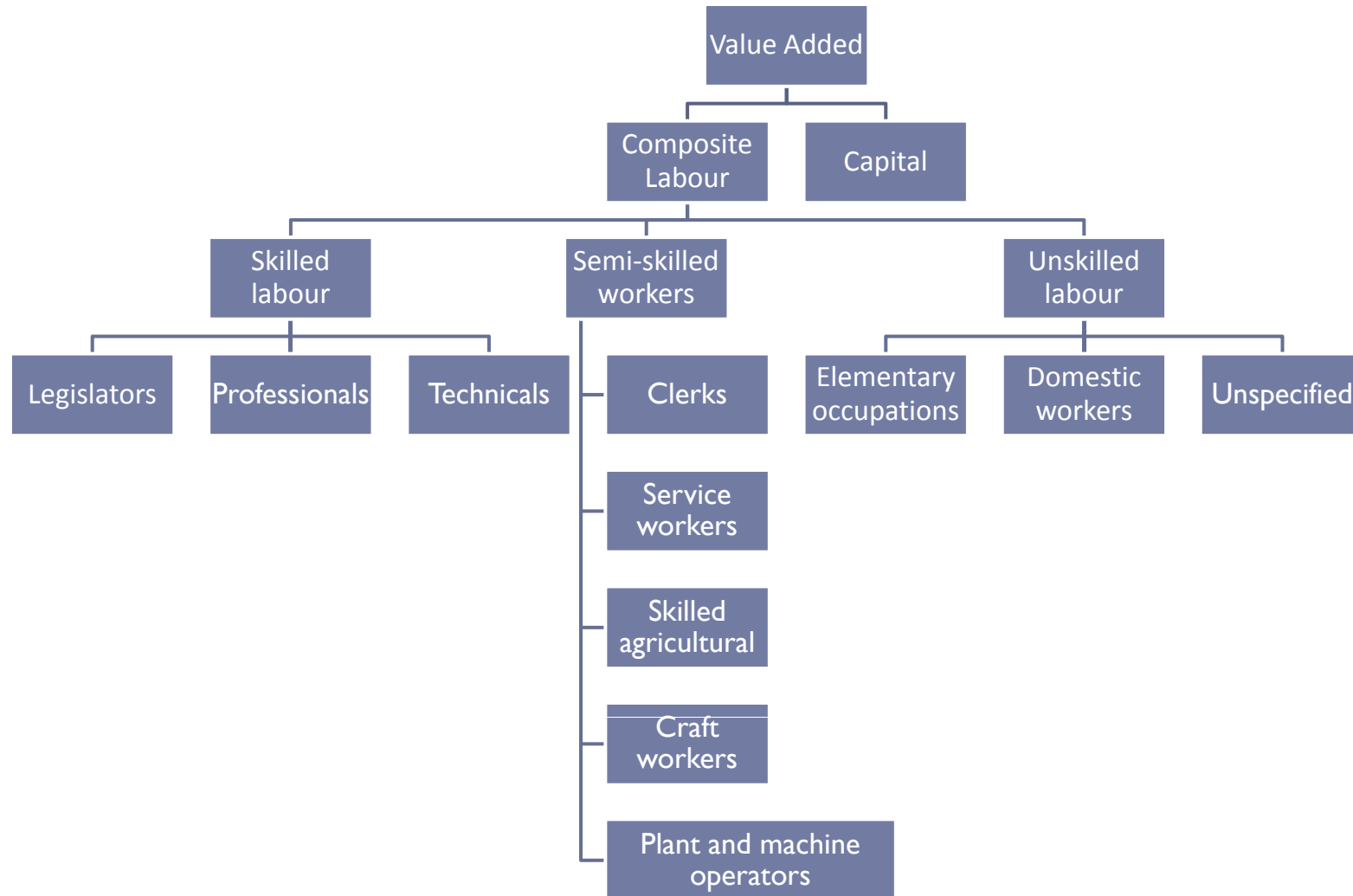
POLICY SIMULATIONS

▸ I. Simulate an increase in government's spending in 2012-2016 by 3% without any fiscal policy (government's deficit adjusts) (Sim1)

▸ II. Keeping government deficit constant, simulate an increase in government's spending financed by an increase in *(Consistency with LT Fiscal Policy Objectives)*:
  - ▸ direct taxes on households(Sim1a)
  - ▸ direct taxes on firms(Sim1b)
  - ▸ indirect taxes(Sim1c)

▸ III. Keeping government deficit constant, simulate an increase in government's investment, *assuming there are spill over effects*, financed by an increase in :
  - ▸ Government deficit(Sim2 and Sim_Prod)
  - ▸ direct taxes on households(Sim 2a)
  - ▸ direct taxes on firms(Sim 2b)
  - ▸ indirect taxes(Sim 2c)

II. Results of an increase in government's spending

Impact of an increase in government's spending without fiscal policy

▸ **Impact on unemployment:**

  ▸ Impact on unemployment for skilled workers (in % to BAU)

	LEG	PRO	TECH
2012	-81,21	-88,96	-79,89
2020	-35,09	-37,17	-33,88

  ▸ Impact on unemployment for semi-skilled workers (in % to BAU)

	SERWO	SKILAG	CRAFTWO	PLANTMACH	CLER
2012	-8,96	-4,05	-2,27	-3,05	-6,08
2020	-3,13	-2,40	-1,16	-1,55	-2,46

  ▸ Impact on unemployment for low-skilled workers (in % to BAU)

	ELEMOCC	DOMWORK	OCCUNSP
2012	-0,16	-1,55	-1,35
2020	-0,32	-0,71	-0,63

Unemployment decreases for all the different types of workers

Impact of an increase in government's spending without fiscal policy

Households' income increases, as well as its savings and consumption.

	YHL	YHTR	YH
2012	0,80	0,43	0,66
2020	0,34	-0,01	0,20

Firms' income increases in the short run but in long run there is a slight decrease due to the decrease in total investment (as firms receive mostly capital income). Thus their savings also decrease in the long run

	YFK	YF	SF
2012	0,61	0,54	0,53
2020	-0,02	-0,02	-0,02

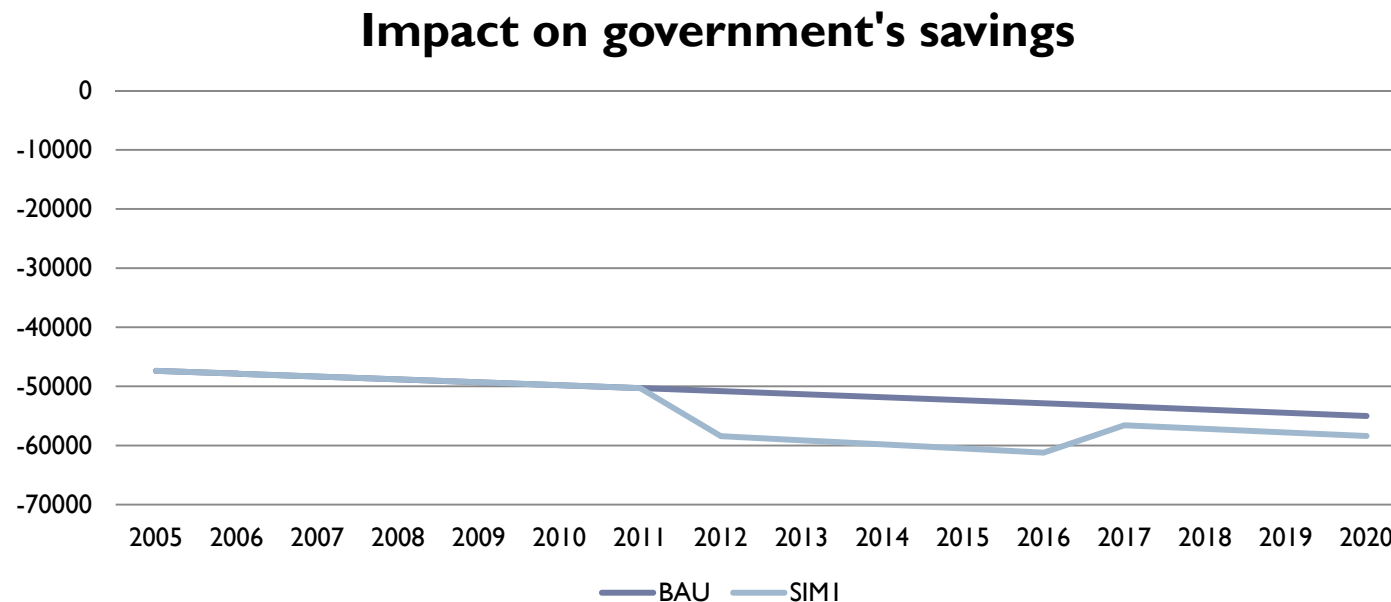# Impact of an increase in government's spending without fiscal policy

▸ Government's total income (YG) increases by **0.48%** in the short run as all its income sources increase (transfers, taxes on production, taxes on products, direct taxes paid by households, and direct taxes paid by firms)

	YGTR	TPRODN	TPRCTS	TDHT	TDFT	YG
2012	0,53	0,56	0,25	0,66	0,61	0,48
2020	-0,02	0,10	-0,04	0,20	-0,02	0,04

▸ In the long run, the increase is smaller, due to decrease in firms tax receipts and transfer income

Impact of an increase in government's spending without fiscal policy

▶ As there is no financing mechanism for this policy, government's savings decrease. This will have an impact on total investment in the long run.
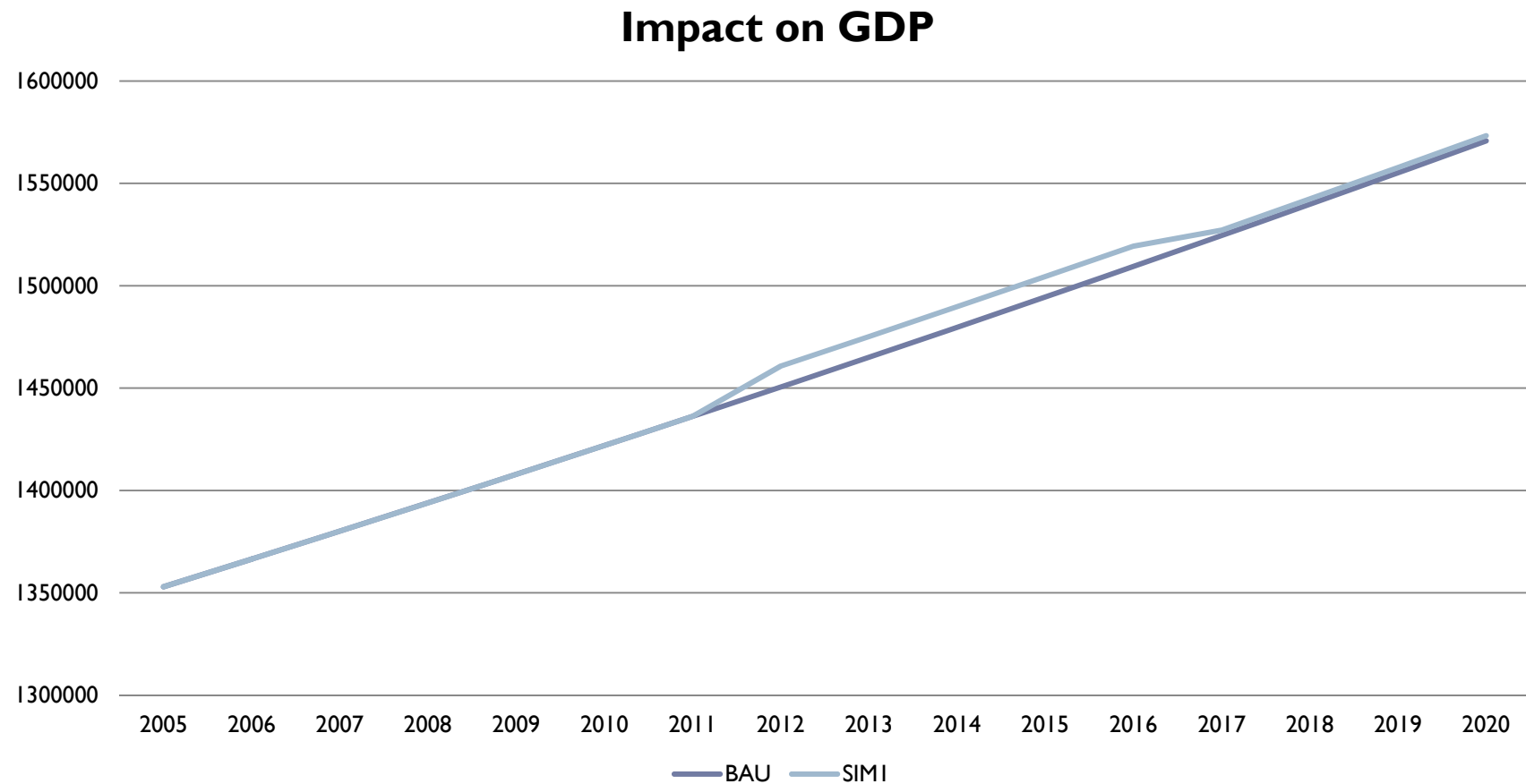
Impact on government's savings

Legend: BAU — SIM1

Impact of an increase in government's spending without fiscal policy

Impact on total investment
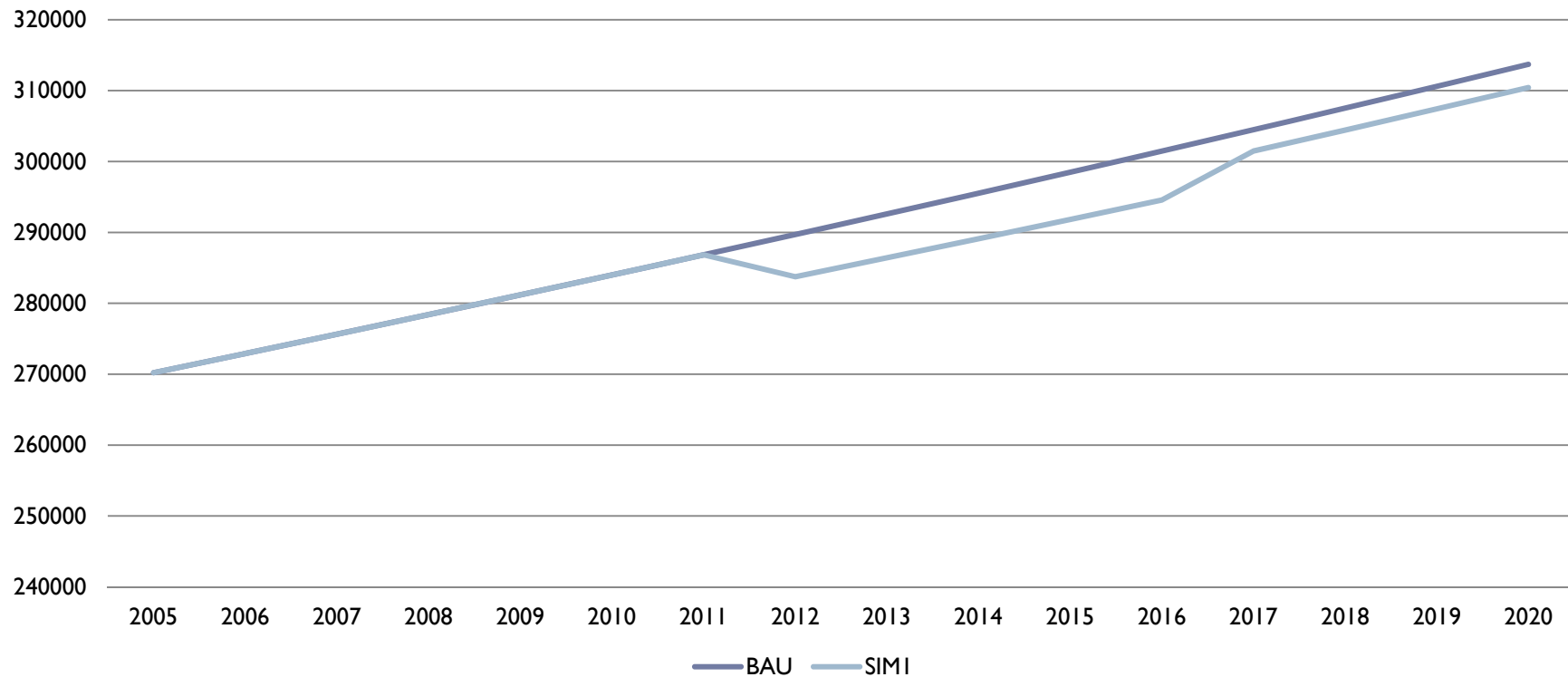
Impact of an increase in government's spending without fiscal policy

Impact on GDP

Impact of an increase in government's spending with fiscal policy:

▸ ## Impact on skilled unemployment (in % to BAU)

	LEG		PRO		TECH	
	2012	2020	2012	2020	2012	2020
Scen 1a	-53,24	-17,06	-57,21	-18,24	-50,99	-16,45
Scen 1b	-66,03	-24,53	-71,74	-26,05	-64,2	-23,64
Scen 1c	-4,06	-2,01	-10,6	-3,94	-1,46	-1,09

▸ ## Impact on semi-skilled unemployment (in % to BAU)

	CLER		SERWO		SKILAG		CRAFTWO		PLANTMACH	
	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020
Scen 1a	-3,94	-1,28	-7,9	-2,67	-0,024	-0,08	-1,45	-0,45	-1,35	-0,4
Scen 1b	-4,91	-1,76	-8,39	-2,85	-1,98	-1,04	-1,82	-0,75	-2,13	-0,88
Scen 1c	-1,5	-0,53	-6,22	-2,09	2,59	0,63	1,72	0,57	1,65	0,53

▸ ## Impact on low-skilled unemployment (in % to BAU)

	ELEMOCC		DOMWORK		OCCUNSP	
	2012	2020	2012	2020	2012	2020
Scen 1a	-0,43	-0,1	-0,56	-0,18	-0,25	-0,08
Scen 1b	-0,3	-0,2	-1,01	-0,4	-0,75	-0,3
Scen 1c	1,32	0,43	0,77	0,26	1,1	0,38

Impact of an increase in government's spending with fiscal policy:

▶ **Results are quite interesting in terms of unemployment.**

  ▶ First two scenarios reduce the unemployment rates for all the workers

  ▶ Impact of third scenario is relatively smaller and there is even an increase in unemployment of low skilled workers and some of the semi-skilled.

  ▶ Indeed, the increase in indirect taxes affects households' consumption as well as different activities, increasing their production cost (as intermediate inputs are more costly). Thus in order to stay competitive (notably on the foreign market) activities resort to retrenchment

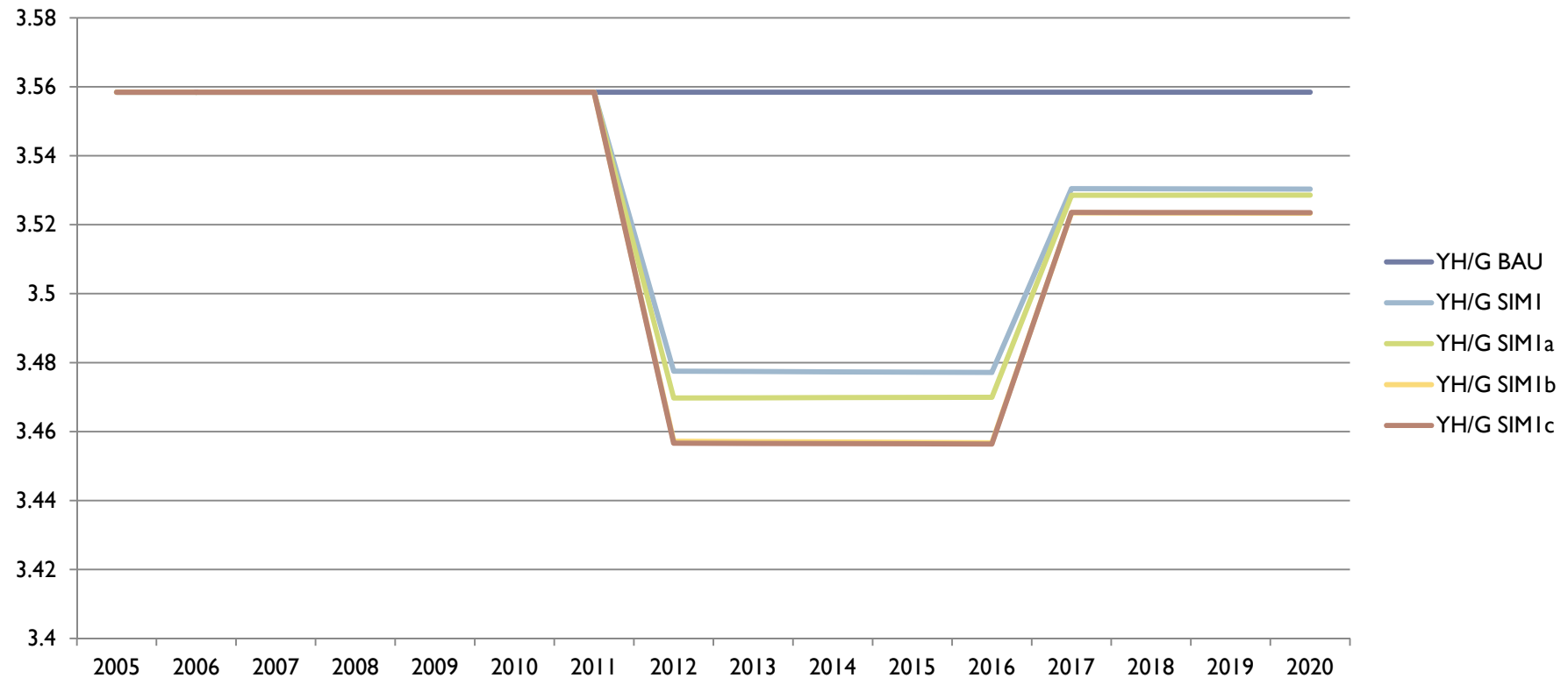 ▶ Note that model has rigid wages, so the impact on unemployment is larger as a result

Impact of an increase in government's spending with fiscal policy:
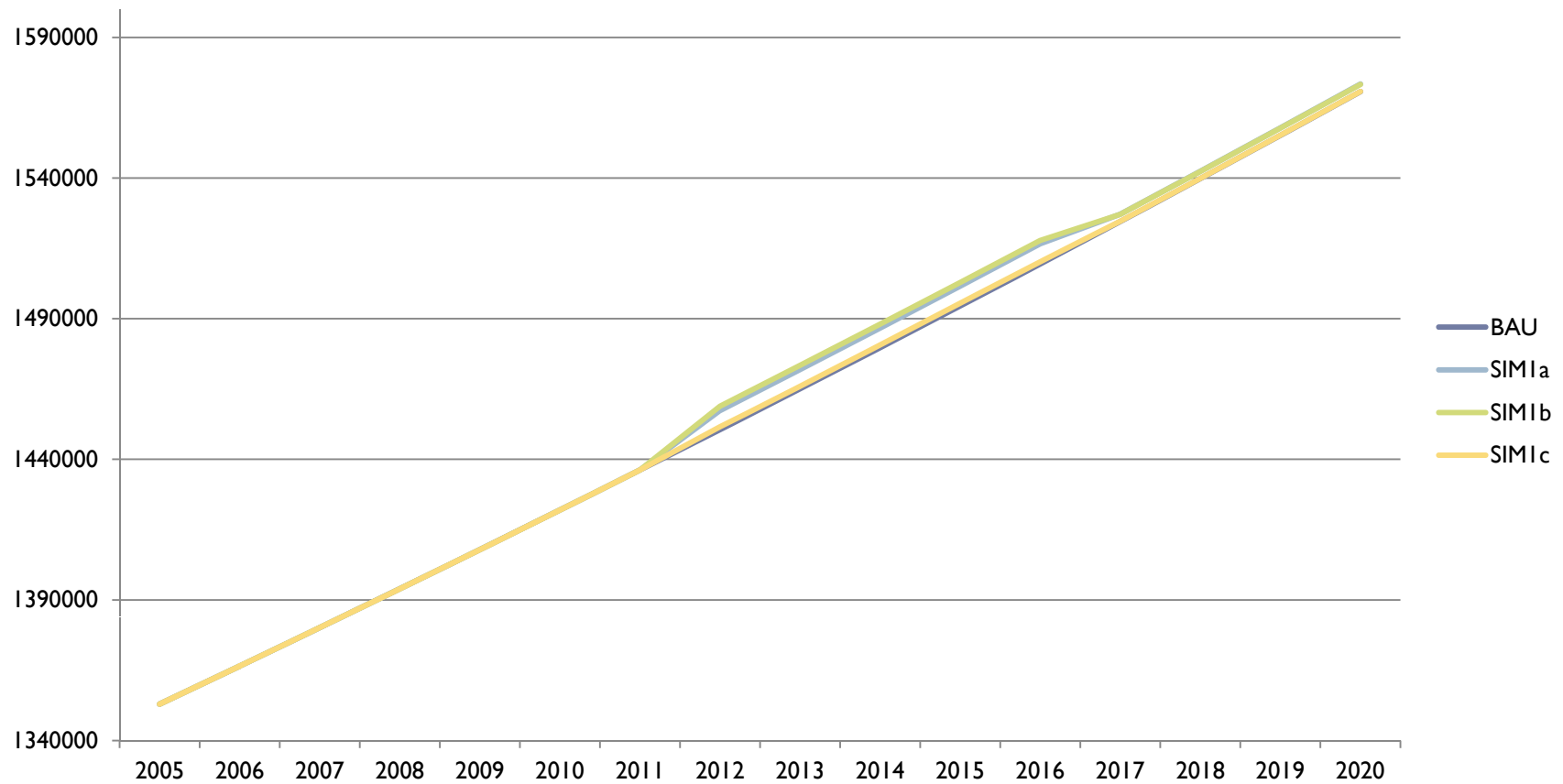
▸ **Impact on total investment**
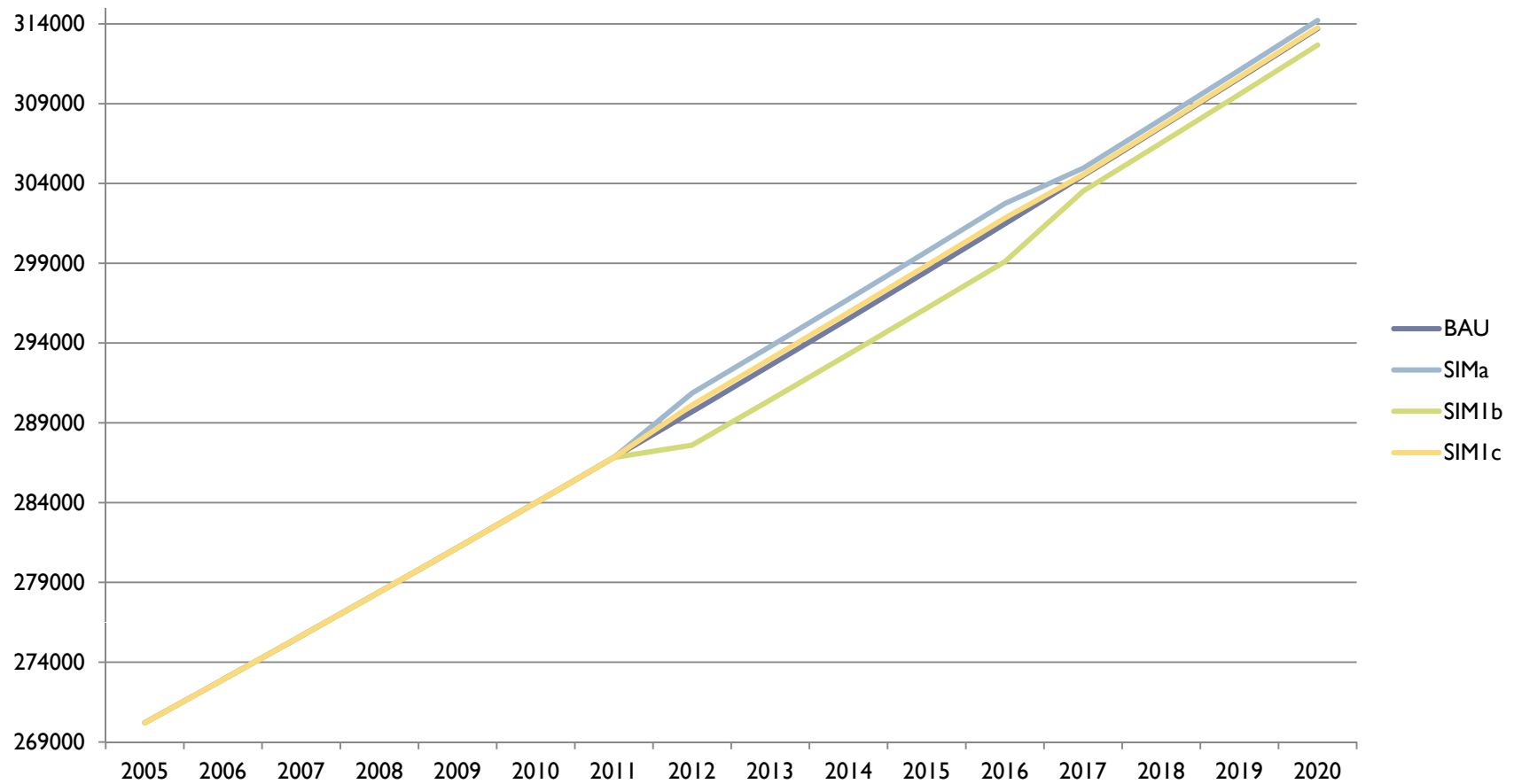
Impact of an increase in government's spending with fiscal policy:

▸ Trend of the ratio households' income over public spending *(Cost effectiveness)*

Impact of an increase in government's spending with fiscal policy:

▸ Impact on GDP

Conclusion of the first scenario: FISCAL POLICY FOR JOB CREATION

- All simulations (except VAT financing) lead to decrease in unemployment for the whole period
- Cost effectiveness: 3 different ways of financing
  - Corporate Tax financing more harmful for firms and ultimately slows economic growth
  - VAT financing affect whole economy and not "pro-poor"
  - Household Tax financing affect well to do households and in an indirect way decreases their demand for commodities (Food and Footwear particularly affected). Compared to other options, this financing seems the least harmful.

III. Investment in infrastructure

Modelling

▶ In terms of modelling, government's investment in infrastructure is taken into account in three different ways:

  ▸ Investment that increases the stock of capital of a public sector. For instance, government is investing in justice, education and so on. The new investment (i.e. a new school) increases the stock of capital of this given sector.

  ▸ Investment that increases the stock of capital of a public-private sector. For instance, government is investing in the energy sector. This sector is not a public one. The investment realised (a new electrical central) increases the stock of capital of this private sector.

  ▸ Investment in infrastructures per se, as in roads. These investments benefit the whole economy but do not increase the stock of capital of any sector. These investments might be the ones that have productivity effects on other sectors.

Scenarios

▸ We follow National Treasury for the scenarios. After 2015, we assume that investment increases at the population rate.

		nov-10	déc-11	2012/13	2013/14	2014/15
Economic services		161,9	197,3	217,8	228,2	230,1
Energy		52,5	71,7	90,4	98,8	102,7
Water and sanitation		14,4	17,8	20,6	19,9	19,8
Transport and logistics		69,1	79,5	76,3	76,9	72,3
Other economic services		25,8	28,4	30,4	32,5	35,2
Social services		**17,2**	26,6	26,8	32,5	35,2
Health		6,7	10	9,6	13,9	15,2
Education		6	9,1	9,8	11,2	11,2
Community facilities		3,5	5,2	4,7	4,8	6,2
Other social services		1	2,4	2,6	2,6	2,7
Justice and protection services		3,8	4,1	4,4	5,1	5,8
Central government and		2,1	4,2	8	3,5	2,5
Financial services		**0,3**	**0,7**	**0,7**	**0,7**	**0,8**
Total		**185,3**	**232,9**	**257,6**	**269,9**	**274,4**

Increase in public investment without any fiscal policy:

‣ Impact on unemployment:

	Without productivity			With productivity		
	LEG	PRO	TECH	LEG	PRO	TECH
2012	-9.91	4.65	-1.76	-13.93	-0.06	-5.06
2020						

	Without productivity					With productivity				
	SERWO	SKILAG	CRAFTWO	PLANTMACH	CLER	SERWO	SKILAG	CRAFTWO	PLANTMACH	CLER
2012	-0.86	-1.64	-1.06	-1.04	-0.3	-0.92	-1.72	-1.35	-1.27	-0.51
2020	-16.14	-29.24	-8.65	-14.32	-12.53	-14.31	-25.64	-11.89	-15.46	-12.83

	Without productivity			With productivity		
	ELEMOCC	DOMWORK	OCCUNSP	ELEMOCC	DOMWORK	OCCUNSP
2012	-1.72	-0.74	-0.61	-1.88	-0.85	-0.74
2020	-13.54	-8.03	-5.90	-15.08	-8.74	-7.07

Unemployment decreases for all the different types of workers

Increase in public investment without any fiscal policy:

Households' income increases, as well as its savings and consumption. Note that transfers they receive from firms are decreasing.

	Without productivity			With productivity		
	YHL	YHTR	YH	YHL	YHTR	YH
2012	0,16	-0,20	0,02	0.20	-0.17	0.06
2020	2,76	-3,99	0,19	3.49	-3.26	0.91

Firms income decreases in both scenarios due to the crowding out effect on private investment. Thus their savings also decrease in the long run

	Without productivity			With productivity		
	YFK	YF	SF	YFK	YF	SF
2012	-0,28	-0,24	-0,24	-0.25	-0.22	-0.21
2020	-5,67	-5,00	-4,89	-4.64	-4.09	-4.00

Increase in public investment without any fiscal policy:

▸ Government's total income (YG) is slightly decreasing in the short run in both scenarios due to the drop in firms' taxes and transfers receipts.
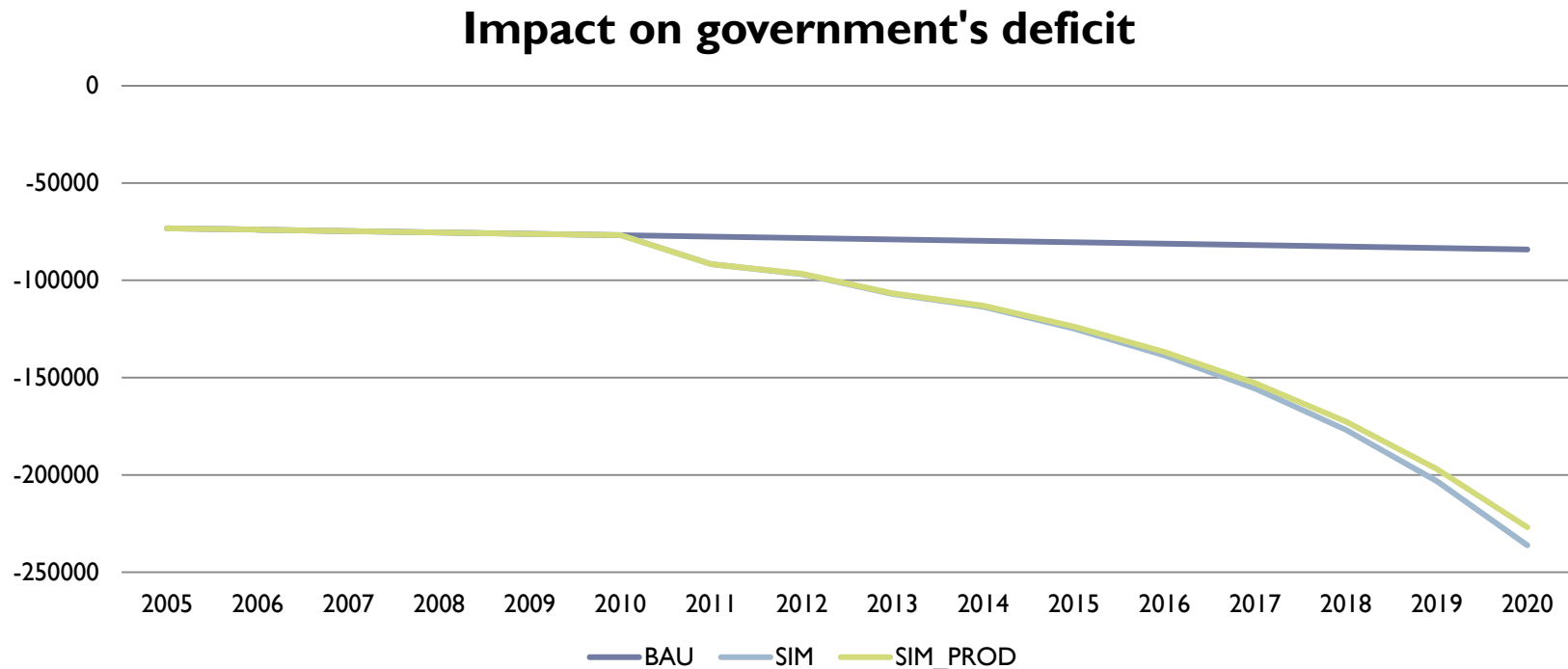
	Without productivity					
	YGTR	TPRODN	TPRCTS	TDHT	TDFT	YG
2012	-0,24	-0,29	0,05	0,02	-0,28	-0,06
2020	-4,89	-2,71	-0,87	0,19	-5,67	-1,87

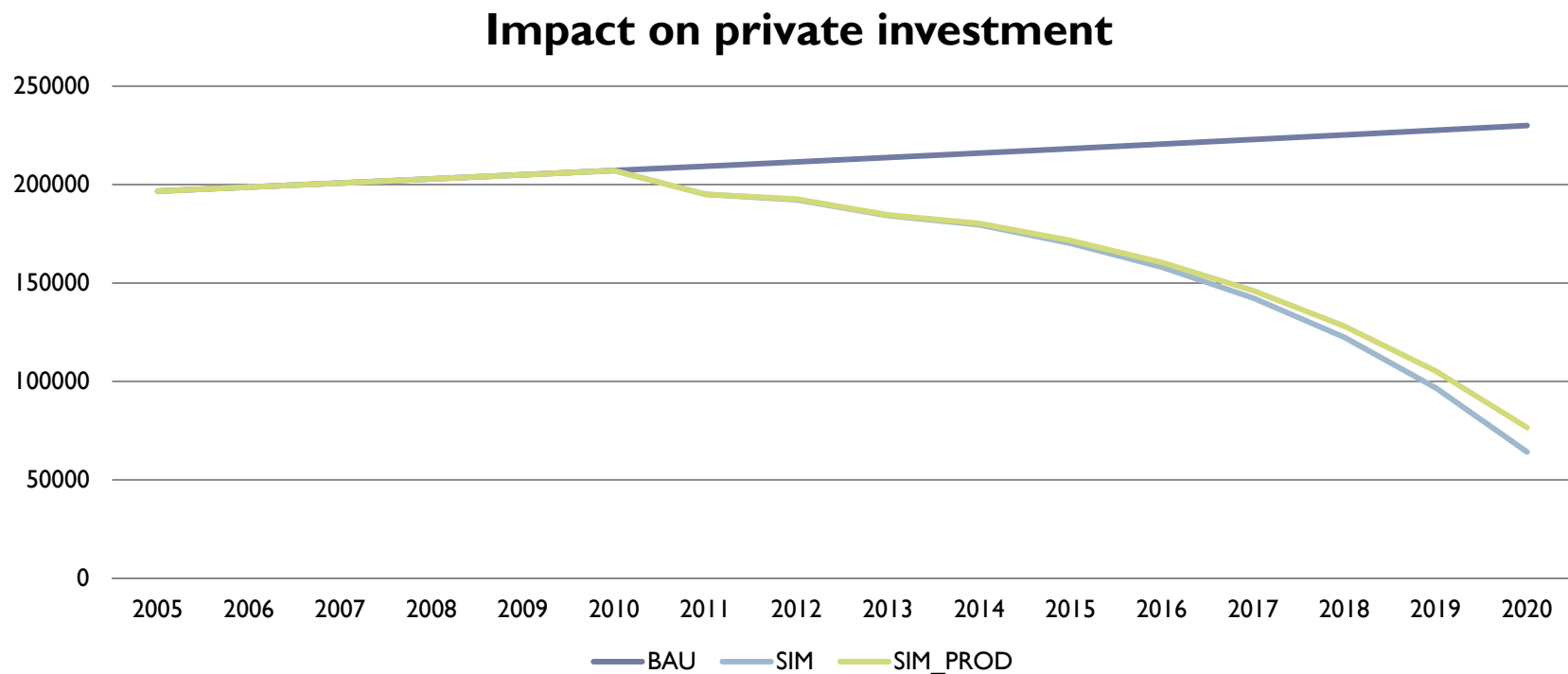|	With productivity					
	YGTR	TPRODN	TPRCTS	TDHT	TDFT	YG
2012	-0.21	-0.24	0.12	0.06	-0.25	-0.01
2020	-4.00	-1.26	0.86	0.91	-4.64	-0.63

In the long run, the decrease is bigger due to the drop in some activities.

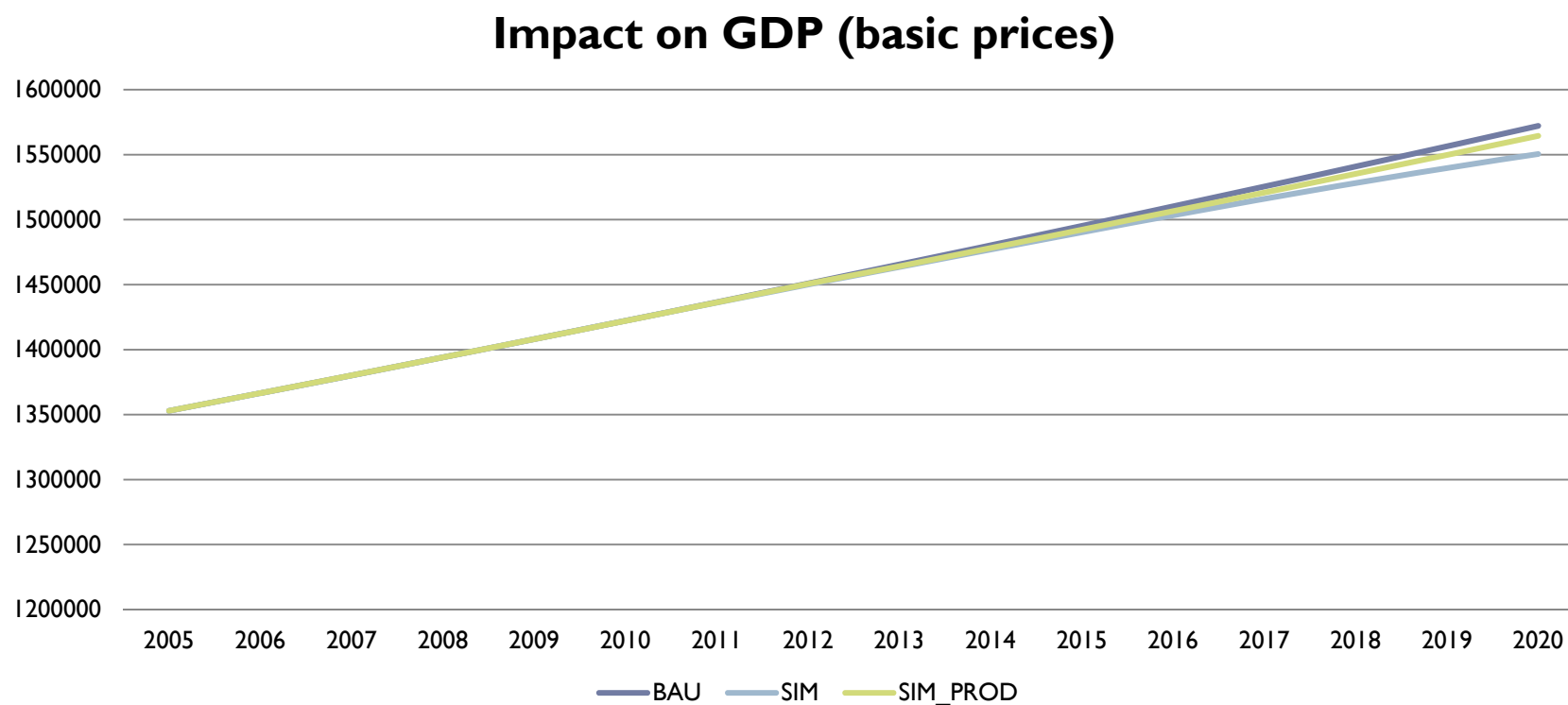# Increase in public investment without any fiscal policy:

▸ As there is no financing mechanism for this policy, government's savings decreases.

Impact on government's deficit

Chart legend: BAU — SIM — SIM_PROD

Increase in public investment without any fiscal policy:

Impact on private investment

Increase in public investment without any fiscal policy:

Impact on GDP (basic prices)

Increase in public investment with 3 different fiscal policies:

	Without productivity						With productivity					
	LEG		PRO		TECH		LEG		PRO		TECH	
	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020
Scen 2a	47.59	171.63	72.99	321.73	41.02	161.00	42.75	50.39	67.29	171.88	37.11	73.07
Scen 2b	21.55	-0.80	42.00	112.16	21.68	51.58	17.09		36.75	-32.04	18.05	-34.51
Scen 2c	162.92	1054.20	192.50	1288.50	124.91	728.59	156.38	877.84	185.02	1076.57	119.78	606.59

	Without productivity										With productivity									
	CLER		SERWO		SKILAG		CRAFTWO		PLANTMACH		CLER		SERWO		SKILAG		CRAFTWO		PLANTMACH	
	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020
Scen 1a	4.73	21.33	1.59	-2.38	7.94	44.43	0.68	-0.59	3.11	14.09	4.46	13.99	1.49	-4.79	7.73	38.36	0.37	-8.44	2.82	6.33
Scen 1b	2.46	5.47	0.49	-9.26	3.61	12.02	-0.09	-5.35	1.24	0.70	2.21	-0.81	0.40	-11.15	3.46	8.20	-0.40	-13.02	0.98	-6.14
Scen 1c	10.94	70.09	5.90	34.69	15.14	97.40	8.42	58.18	10.59	71.68	10.58	60.01	5.74	29.80	14.83	88.72	8.00	47.01	10.20	60.83

Increase in public investment with 3 different fiscal policies:

▸ Impact on unskilled unemployment (in % to BAU)

	Without productivity						With productivity					
	ELEMOCC		DOMWORK		OCCUNSP		ELEMOCC		DOMWORK		OCCUNSP	
	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020	2012	2020
Scen 2a	-2.63	-20.94	1.55	6.87	1.88	9.73	-2.77	-24.10	1.40	3.00	1.71	5.26
Scen 2b	-2.21	-18.30	0.52	-0.08	0.76	2.43	-2.36	-21.81	0.39	-3.53	0.60	-1.61
Scen 2c	1.79	12.69	4.95	33.26	5.32	36.22	1.58	7.61	4.76	28.01	5.10	30.42

▸ Scenario 2b seems to be less harmful in terms of unemployment, for all the different types of workers.

Increase in public investment with 3 different fiscal policies:

▸ **Results are quite interesting in terms of unemployment.**

  ▸ Impacts on unemployment are quite diverse from one scenario to the other. They actually depend on the sectors government is investing in.

  ▸ Indeed, investing in energy sectors (that are not labour intensive) will have less effects than investing in sectors that are labour intensive.

  ▸ Public investment has a crowding out effect on private (i.e. productive) investment. Note that results are better if productivity effects are taken into account.

  ▸ Note as well that model has rigid wages, so the impact on unemployment is larger as a result *(Insider Outsider)*

Increase in public investment with 3 different fiscal policies:
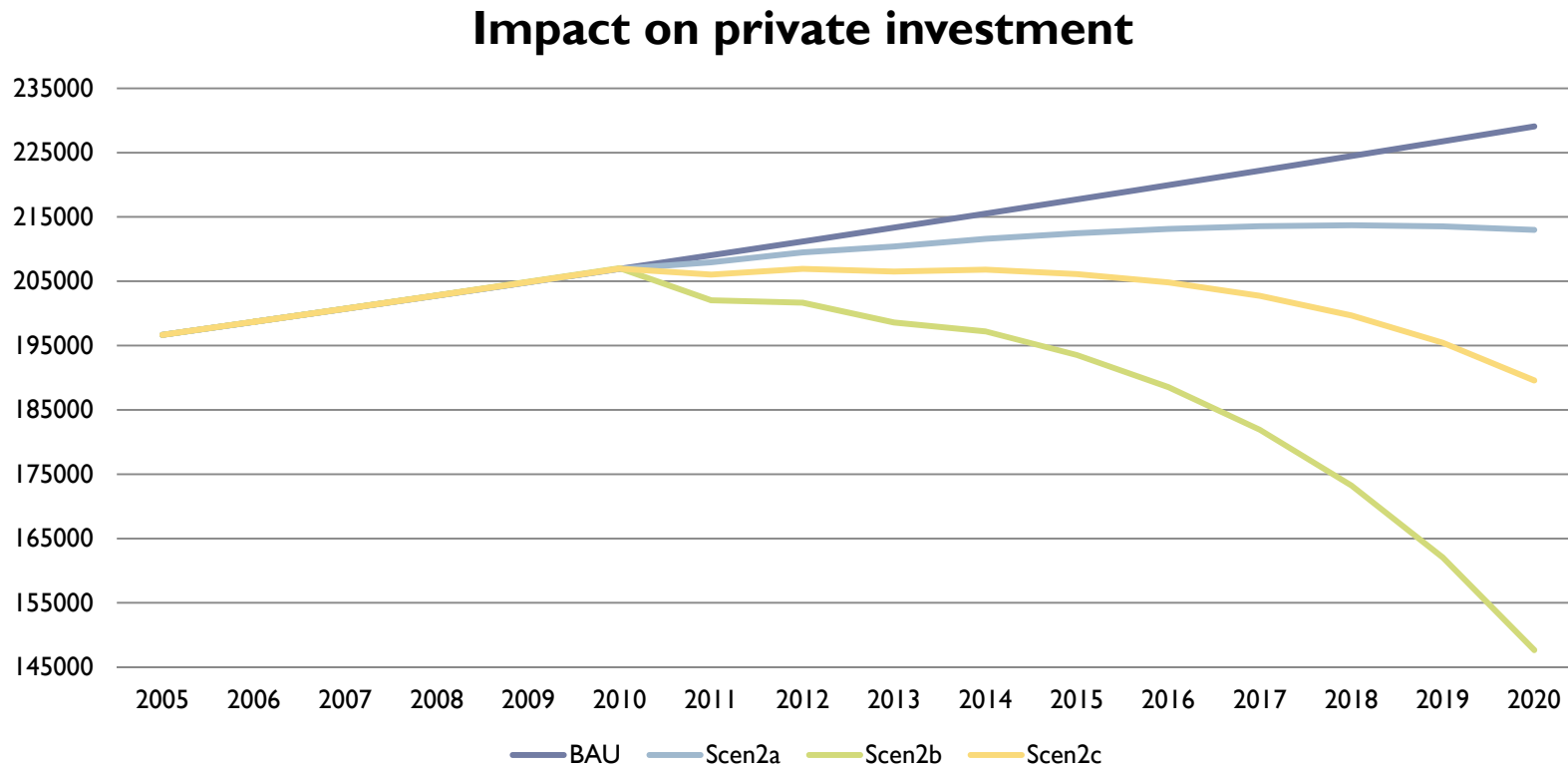

Impact on total investment

Legend: BAU, Scen2a, Scen2b, Scen2c
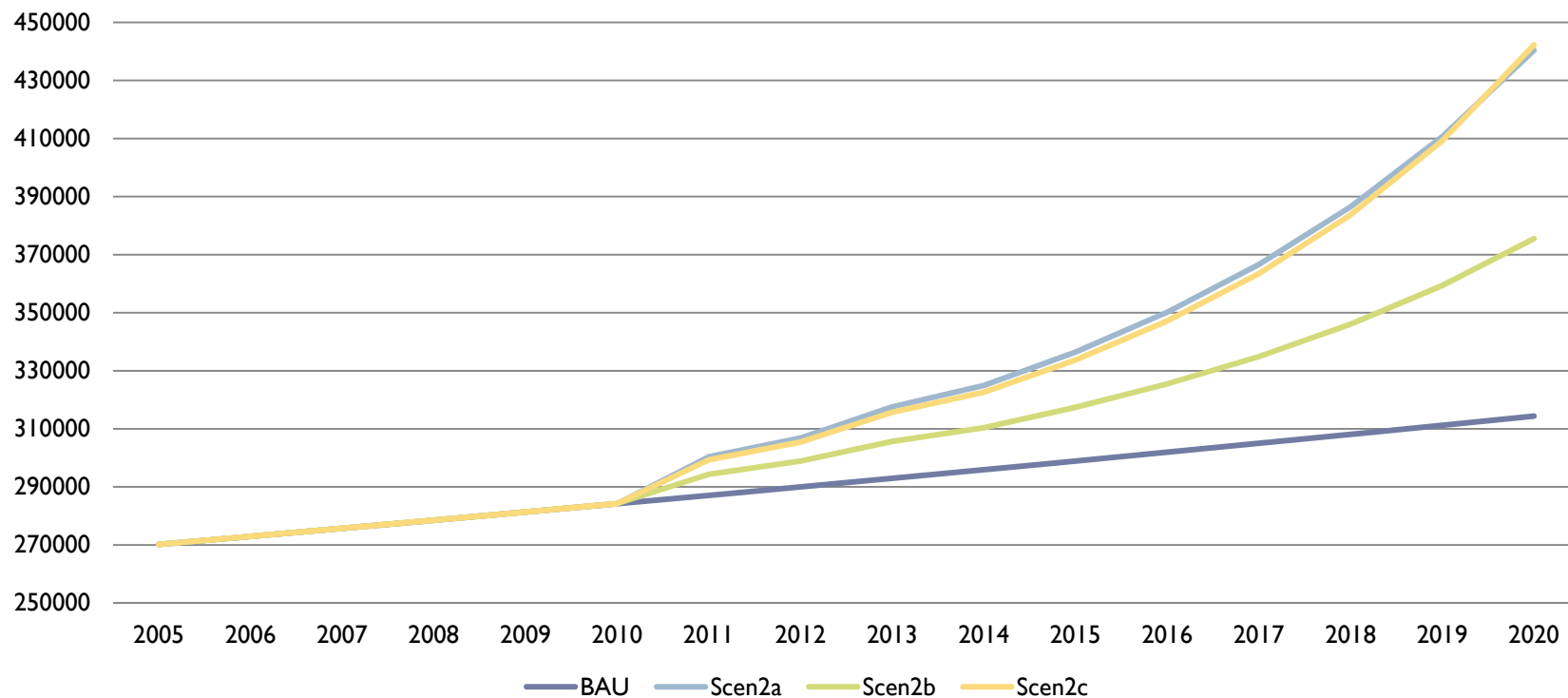
Increase in public investment with 3 different fiscal policies:

Total investment with productivity effects

Impact on total investment
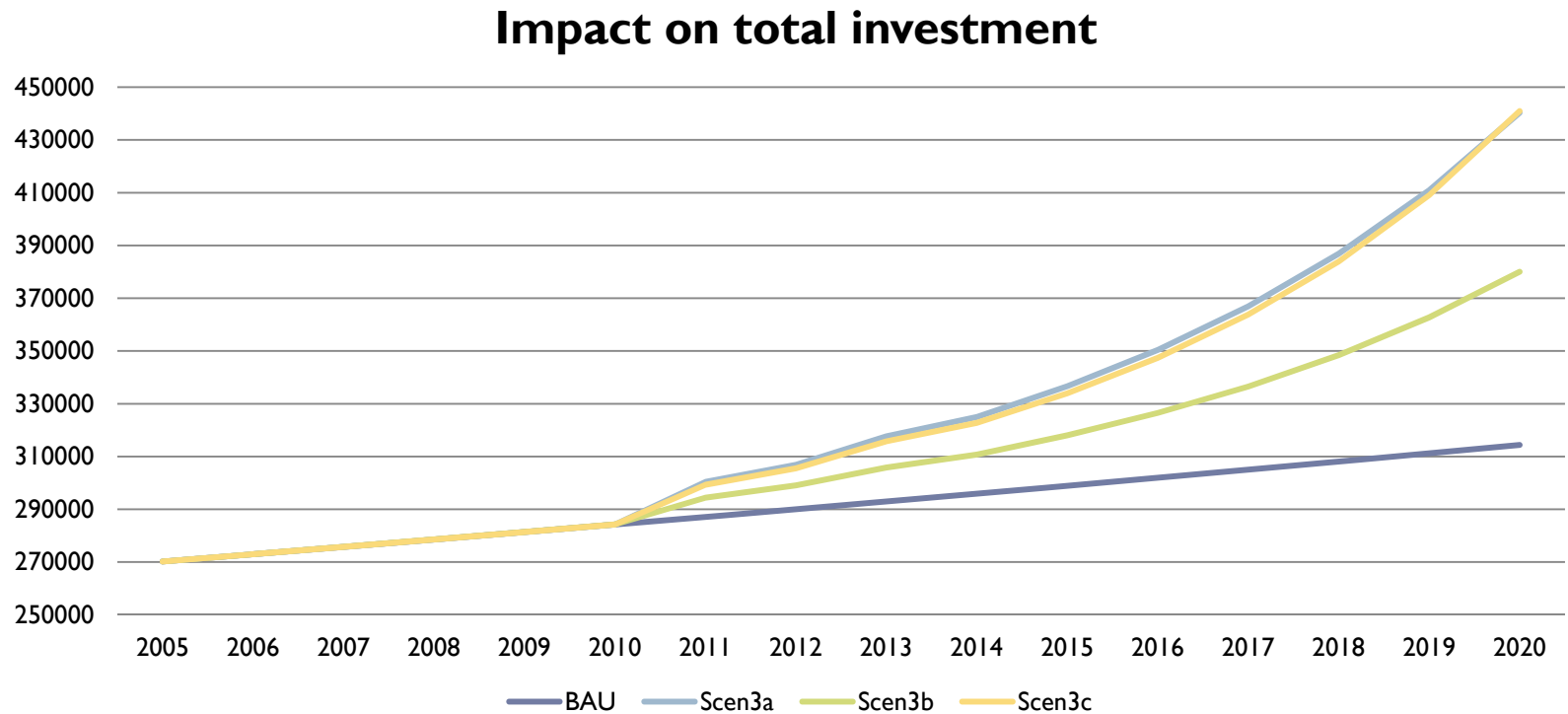
Increase in public investment with 3 different fiscal policies:

Private investment without productivity effects

Impact on private investment

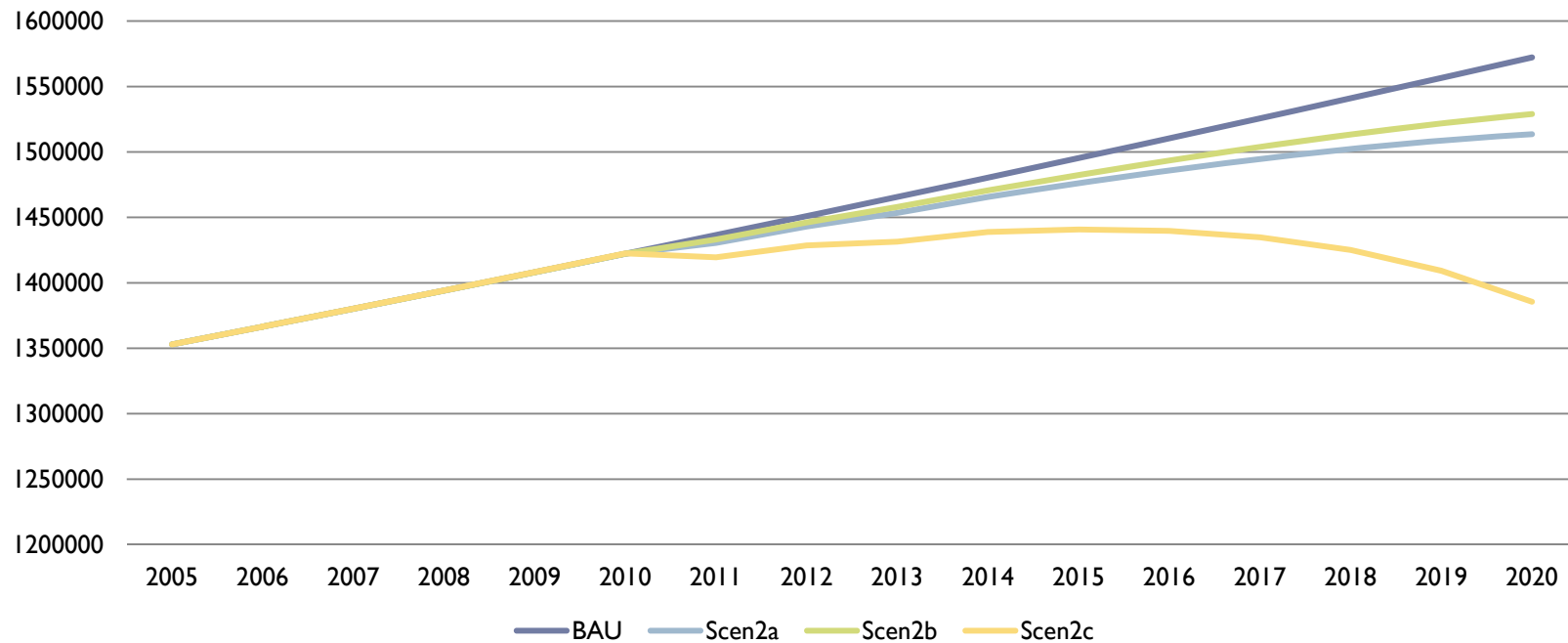# Increase in public investment with 3 different fiscal policies:

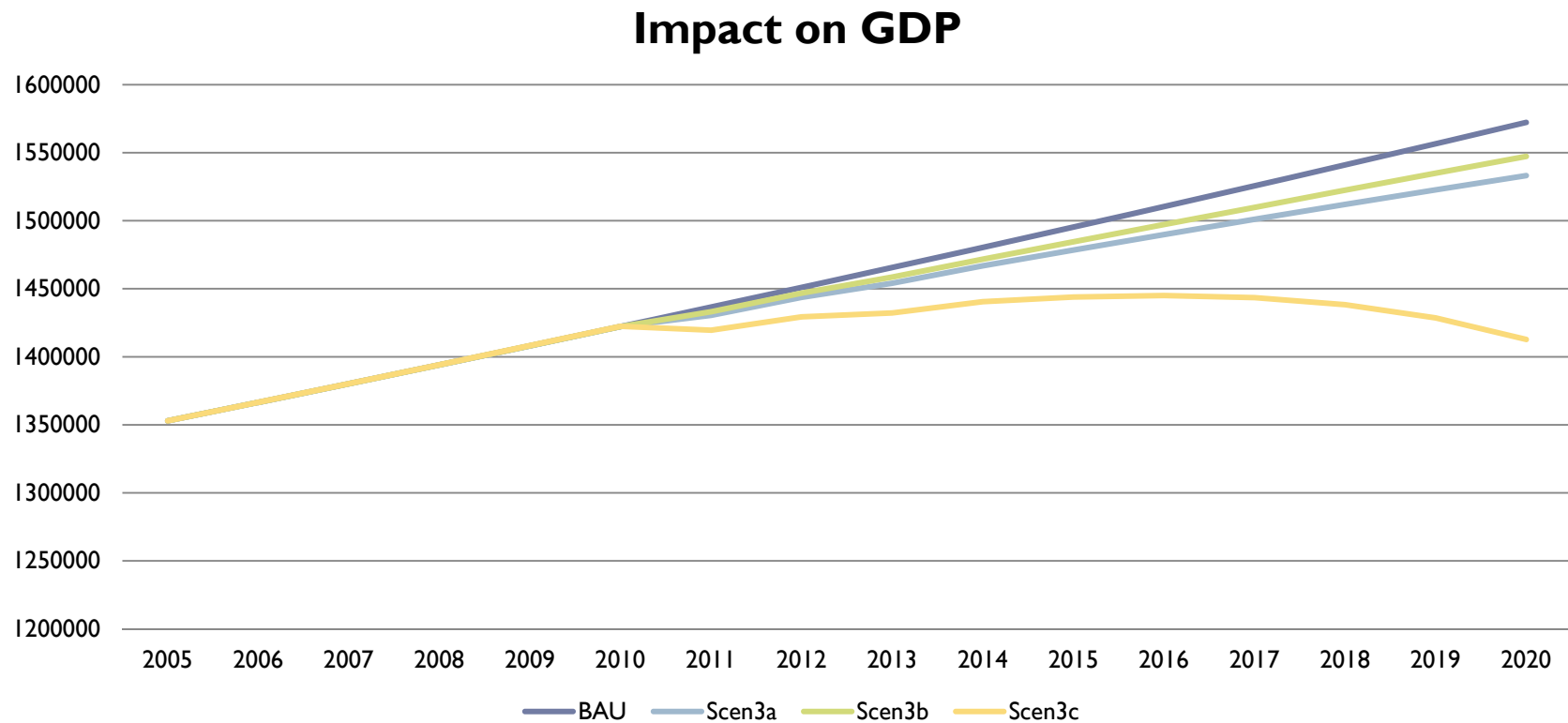Private investment with productivity effects

Impact on private investment

Increase in public investment with 3 different fiscal policies:

Impact on GDP (basic prices)

Legend: BAU — Scen2a — Scen2b — Scen2c
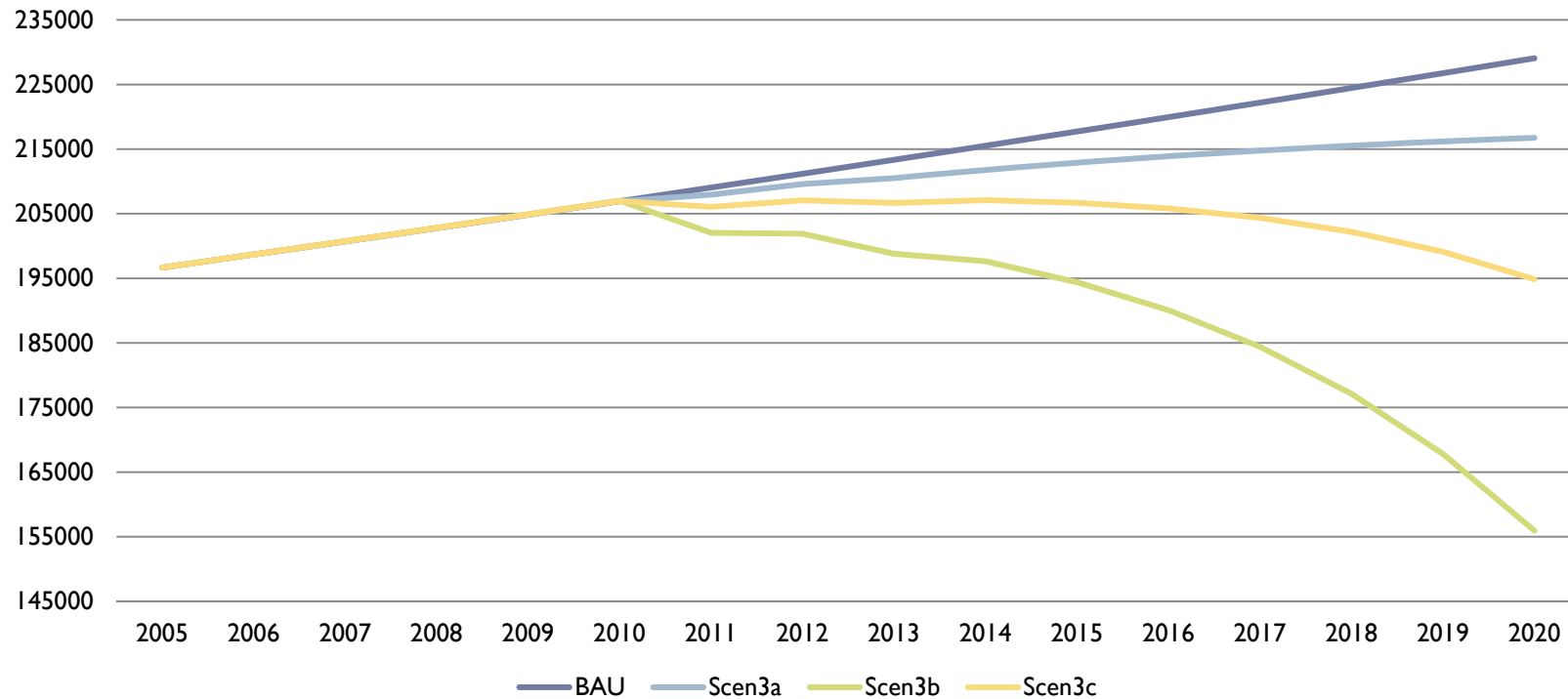
Increase in public investment with 3 different fiscal policies:

▸ Impact on GDP with productivity effects

Impact on GDP

IV. CONCLUDING REMARKS

Conclusion

▶ Integrated approach that allows a single framework to explore impact of jobs policy on both demand and supply sides.

▶ In terms of unemployment, an increase in government's spending has a better impact (whatever the scenario of financing) than an increase in public investment.

▶ However, note that if the investment policy is "job targeted", results would be better.

▶ Moreover, productivity effect might be bigger in some sectors (here we assume the same productivity gains across sectors)

▶ Other sources of financing could be simulated: taxes on fuel, a combine increase in direct taxes (both firms and households)