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Technical Report – Part II:

Guidance on the identification and measurement of regulatory benefits

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Contact person:
Mr Theo Jans
Tel.: +31 43 32 96 367
E-mail: t.jans@eipa.eu

European Institute of Public Administration
O.L. Vrouweplein 22
6211 HE Maastricht
The Netherlands
www.eipa.eu

GUIDANCE ON THE IDENTIFICATION AND MEASUREMENT OF REGULATORY BENEFITS

A practical guide for the preparation of Regulatory Impact Assessments

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PART I Introduction: How economists think about economic benefits

1. Market failures

A quintessential part of conducting a Regulatory Impact Assessment (RIA) is the identification of costs and benefits associated with a policy intervention. Identifying and measuring benefits is often more challenging than costs, due to the fact that for costs we can use existing markets and prices and for benefits we oftentimes do not have prices. This manual enables policy advisors to determine economic benefits and to assess the potential value of those benefits, in order to conduct better and more comprehensive RIAs.

The objective of this manual is to provide practical guidance in the process of quantifying the benefits of regulation in a RIA. As it is key to have understanding of the theory behind regulatory benefits (and costs), the manual first presents an overview of the economic theory. Thereafter, the manual will go into detail on the identification and quantification of regulatory benefits by suggesting concrete steps. These steps will be presented in the form of a checklist and are accompanied by numerous examples of regulatory benefits.

Basic neoclassical economic theory stipulates that markets will ensure an optimal allocation of limited goods and services if four conditions hold true. These conditions are: (1) there is not a single market actor (buyer or seller) that has market power (meaning the ability to influence the market price), (2) the products that are traded on the market are homogenous, (3) there are no barriers to enter or exit the market and (4) every single market actor has perfect information on market conditions at any time. If these four conditions are met, markets are said to be perfectly competitive. This means that the price on the market reflects the actual willingness to pay of the consumers and the quantity supplied in the market is optimal (meaning there is no shortage or oversupply). In perfect competitive markets the social optimum is reached. The social optimum represents both the price and quantity that are socially desirable, thus including the impact of external effects such as pollution (the latter is not included in the private optimum of the producers).

In practice, the four conditions stipulated above do not hold true for most markets as they fail to reach the social optimum. This means that the market price does not really reflect the actual value of goods and services and/or that the quantity supplied on the market is not optimal (oversupply or shortage). If the market is not in a state of perfect competition, we say that there are market failures. Traditionally, four types of market failure are identified: (1) imperfect competition, (2) externalities, (3) information asymmetry, and (4) public goods. Additionally, economic authors increasingly acknowledge transaction costs as the fifth market failure.

The role of governments is to design interventions that correct these market failures so that the market can shift towards the social optimum and thus creating benefits for one or more actors in the market (e.g. consumers). However, government interventions also result in costs for actors in the

market (e.g. producers) and can also be negative for the market powers that had a benefit of the market failure (e.g. the monopolist that charged higher prices before a regulation opened the market to new competitors). Therefore, we need to be able to compare and weigh the costs and benefits associated with government intervention in order to assess their efficiency and desirability. Furthermore, government intervention can take different forms, each with different costs and benefits, which means that we also need to identify which of the possible interventions overcomes the market failure most efficiently.

Historically, assessments of costs and benefits linked to government intervention were carried out qualitatively, but more recently it has been recognized that humans are animated by all sorts of psychological biases which can prevent them from identifying the best option for society. A quantitative approach helps to resolve this problem (Sunstein, Simpler: The Future of Government, 2014). Ideally, costs and benefits are monetised so that the impacts of different interventions can be compared. When costs and benefits of government intervention are traded on a market or can be traced back to a market, then this monetisation is relatively straightforward. However, if no markets exist for costs and benefits, then valuation can be more challenging.

This manual offers an introduction to the quantitative approach to successfully conduct a RIA. Before going into detail on the practical aspects of identifying, describing and quantifying economic benefits, an overview of economic theory underlying the analysis of regulatory benefits is provided in the following section.

2. Transaction costs

The concept of transaction costs is a key concept relating to government intervention and seen as a separate market failure by some economists. Transaction costs are the costs of using the market system and are all the additional costs that need to be made when using the market (such as search and information costs, administrative costs, contract costs, etc.). Imagine that you want to buy a new car and the price is 5.000 euro. You will than experience search and information costs on finding the appropriate car (looking online, taking a test drive, etc.) and afterwards contract costs to make up a contract with the seller etc.. The market transaction of buying a car does not happen automatically but one has to make costs for the transaction (which could be investing some time). So the market transaction of buying a car has a cost of 5.000 euro (the price) but additionally also the time effort of looking for the car (and the seller also has to invest time) and making a contract. The time is an additional effort (and thus cost) that needs to be made in order for the transaction to happen.

The concept of transaction costs is present in every market and in many market governments intervene to reduce the transaction costs and thus make it easier (and less costly) to perform a transaction. Think for instance of certified professions like doctors, surgeons and notaries. If everyone would be allowed to call themselves a doctor, an individual with a specific disease would have great trouble in finding a person who is capable of adequately curing that disease. The patient would have to ask around to find someone who has knowledge of the disease and who knows a

person who can properly treat it. There would however still be a high level of uncertainty regarding the outcome of the treatment. Thanks to regulation stating that doctors have to be certified, patients can rely on any doctor's education for their treatment and therefore search and information costs can be reduced noticeably.

Another example is the European legal warranty period of two years on consumer electronics like smartphones, laptops and televisions. All consumers are covered by a two year warranty period for faulty devices, regardless of the producer or (registered) seller of the device. This means that EU-consumers are assured that all components of their device are under warranty and that the seller of the product is responsible for repairing, replacing or refunding the customer. In comparison to for instance the United States, these customer rights provided by the legal warranty result in remarkably lower transaction costs for European consumers.[1]

Note that, besides the benefits for consumers in these two examples of government intervention abating transaction costs, it is likely that regulation results in regulatory costs. Take the case of the legal warranty period of two years on consumer electronics. Producers and sellers of these devices have to implement business information systems to keep track of the date of production and sale in order to comply with the regulation. Because the legal warranty period is stated by the law, it has to be supported by provisions on legal redress and litigation procedures.

3. Proportionality in analysis

When assessing costs and benefits of regulation one should keep the proportionality of the scope and depth in mind. If the benefits of a certain regulation are limited, the policy maker should consider limiting the scope and depth of the analysis accordingly. In the context of a RIA, policy makers should uphold the proportionality principle throughout the entire process to make sure that the policy options and their impacts are in line with the objective that is pursued by the government intervention. The following factors and questions can guide policy makers in their evaluation of policy options to the policy objective:

- Impact: Which impacts are large enough to make a difference? Which impacts seem to be important?
- Need: What is the objective of the analysis? Do we need to know the actual values for the benefits or do we need to know the magnitude of the benefits? Or do we just need to know that the benefits exceed the costs? Or do we just need to identify the option that achieves the policy objective whilst creating the highest net benefit (meaning the benefits minus the costs)?
- Meaningfulness: Given the data already available and the time and resources available (to find or collect more data), which impacts can be meaningfully quantified? And monetised? If the measurement is not sufficiently precise to answer our questions, then the quantification and/or monetisation is not meaningful.

[1] https://europa.eu/youreurope/business/dealing-with-customers/consumer-contracts-guarantees/consumer-guarantees/index_en.htm

4. Overview of methods to measure benefits

For many goods and services there are **existing markets** on which the product or services in question are traded. By trading a good or service, producers and consumers create market value and establish an equilibrium price and quantity through their level of supply of and demand for the product. For most (standard) products and services the market price reflects the actual value of the underlying good, in other words the market price reflects the actual willingness to pay of consumers. If the market price were too low in the long run, consumption would increase and price would go up. If the market price were too high in the long run, consumption would decrease (because consumers are not willing to pay the price) and the price would naturally go down. So, in general economists believe that the price mechanism can be used to assess the value of a certain good or service. Suppose the city of Warsaw wants to perform a RIA on setting up a low emissions zone (LEZ) to reduce CO_2 emissions of private cars by 25% in a given time span. Policy makers from the city of Warsaw would have to determine the benefits of the proposed intervention. One of the economic benefits of the LEZ will be the positive impact on sales of hybrid and electric cars. By looking at the current market prices and quantities for these types of cars, the benefit of the government intervention for the automotive industry can easily be determined.

However, there are specific points of attention in using the market price for standard goods. The first point is the drastic increase or decrease in the demand of a certain product following a government decision. For instance, if an LEZ would be installed in Warsaw, it is likely that demand for environmentally friendly cars increases. If however, the demand would increase drastically (for instance, triple the number of cars sold) than producers would respond to this increase in demand and they could increase their price accordingly. However, note that for most goods and services demand has to remain at a significantly higher level over a given period of time before producers will start adjusting their prices. If for instance an entire group of twenty students would individually buy a cherry pie at the local bakery, the baker will not charge prices the next day. Only when those students would buy (for instance) a pie each day for two months, the baker would increase his prices. Additionally, given that most goods and services are traded on national or even international markets, chances of an instantaneously price increase are limited. To sum up, we can use the price system given that it will reflect the actual value of a good. In situation where a large shock increase or decrease in demand follows directly from the regulation we should careful using the price mechanism.

The second point of attention when using the market price is the consideration of subsidies that distort the actual market price levels. Think again about the example of establishing an LEZ in Warsaw and the positive impact of it on sales of hybrid and electric vehicles. By using the current market prices and quantities for these types of cars, the benefit of the government intervention for the automotive industry can be determined. However, if the producers of these cars benefit from government subsidies, the market price (consumers pay) is artificially low and needs to be increased by the amount of the subsidy to determine the actual (and "real") market price. In this case, the

corrected actual price is called the shadow price of the good. To sum up, the market price in a distorted market can be corrected for by applying shadow pricing to obtain the social optimum.
The third point of attention concerning the price mechanism relates to goods and services for which there is no price mechanism and basically **no markets exists**. Think for instance about clean air or water, biodiversity, legal certainty, and being in good health. The economic value of these goods and services cannot be derived from the market price (willingness to pay) because there is no market on which these goods and services are traded. Therefore, these goods are often called non-market goods or non-tradable goods. In the example of establishing an LEZ in Warsaw and determining the benefits of this intervention, one can think of the benefit of improved air quality in the city of Warsaw. To monetise these benefits, we need to resort to non-market valuation techniques.

Valuation methodology has progressed over the past decade, and many techniques have been developed to address the specificities of different situations. Different researchers have proposed different classifications of the many available techniques, but so far, no single classification scheme has emerged as dominant (Melichar & Ščasný, 2006). One approach that is useful for our purposes is to distinguish between demand-side and supply-side schemes (Campbell & Brown, 2016).

On the **demand-side**, the objective is to determine the willingness to pay of consumers for a certain economic benefit. There are two ways of determining willingness to pay, i.e. stated and revealed preference methods.

With **stated preference** methods, benefits are measured by surveying consumers (and to a lesser extent other stakeholders involved) on their willingness to pay. Commonly used methods of stated preference surveys are: (1) the open-ended willingness to pay method, (2) the closed-ended iterative bidding method, (3) the contingent ranking method, (4) the dichotomous choice method, and (5) conjoint analysis (Boardman et al, 2011; Rao, 2014).

For example, one possible way of measuring the value of an LEZ in Warsaw would be to survey the inhabitants regarding their willingness to pay for a less polluted environment. The survey would start with a detailed description and even possibly simulated images of three possible states of pollution in Warsaw, one being the status quo and the other two being two different lower levels of pollution. Then respondents would be asked if they would be willing to pay a certain low sum of money annually to exchange the status quo for the next lower level of pollution. If the respondent agrees, then they are asked if they would be willing to pay an additional fixed amount. As long as the respondent keeps agreeing, the interviewer keeps adding the same fixed amount, until the respondent indicates that he has reach the optimal sum that he is willing to pay. The problem with this approach is that stated preference survey techniques are sensitive to different sorts of bias and strategic answers (Boardman et al, 2011).

The second way to determine willingness to pay for certain non-market benefits, is to observe people's actions and to infer the value they place on goods and services by using a **revealed preference** technique. With revealed preference methods consumers are not explicitly asked to state

their preference for a specific policy option, and the consumers' willingness to pay for a benefit is not derived from consumers' answers to specific questions. Oppositely, with revealed preference methods the choices and behaviour of consumers are observed under normal circumstances or derived from readily available data. For example, a possible revealed preference approach to measure the value of an LEZ to the inhabitants of Warsaw would be to investigate household purchases of goods that improve air quality, like air purifiers, clean air house plants or air-conditioning and heating system filters. This would reveal how much money people are willing to pay to improve air quality by a given amount. The challenge with this approach is to identify and observe the actions that would reveal the relevant information. Sometimes stated preference techniques are the only feasible and cost-effective option to establish a value without resorting to extensive (and expensive) surveys.

The **supply-side** approach provides alternative methods to quantify the benefits of government intervention. One relevant approach is to measure the **avoided costs** of a government intervention (DG Regional and Urban Policy, 2014). Thereby we would presume that market values for the avoided costs (benefits) are known or directly observable. In our example of establishing an LEZ in Warsaw, the health benefits for the inhabitants can be measured by looking into the cost of hospitalisation and medical consultation for the inhabitants due to air pollution. This would mean that the medical cost per inhabitant as well as the number of susceptible inhabitants are known or observable. This avoided cost or preventative cost approach is usually more resource efficient than the stated and revealed preferences methods. Consequently, this methodological approach represents a reasonable starting point for the measurement of the benefits of government intervention and will be implemented in the remainder of this manual. Nevertheless, it is important to note that this approach does not actually measure welfare, just a specific component contributing to welfare. Therefore this method could underestimate welfare, providing more of a lower bound of welfare estimates.

To wrap up this overview of the monetisation process, we return to the starting point of the analysis, namely, the identification of needs and the proportionality of the analysis. Suppose Warsaw can implement the LEZ in 3 different ways: (1) installing intelligent cameras that recognise cars that are not allowed to enter the LEZ, (2) issuing vignettes to car owners with permission to enter the LEZ, and (3) combining the installation of intelligent cameras and the issuance of vignettes. If policy makers can formulate all three options in such a way that they all attain the same policy objective, specifically, a 25% decline in CO2 emissions of private cars, it is no longer necessary to monetise the benefit, because it is identical for the three options. In this case, it is only necessary to measure the costs of the government intervention for each option (e.g. the cost of cameras, the costs of vignettes, etc.).

5. Direct versus indirect benefits

In general, the benefits of government intervention can be differentiated into direct and indirect benefits. Direct benefits can be linked to the policy goal of the regulation and are a direct consequence of the regulation itself. There are two types of **direct benefits**. First, benefits that

address the above-mentioned market failures (such as reinforcing market competition, internalising external effects, restoring information failures and bringing the production of public goods to the socially desired level) can all be categorised as direct benefits. Second, the general benefits that improve society as a whole are also seen as direct benefits. The other type of benefits of government intervention are labelled **indirect benefits**. They are: (1) benefits from third party compliance with legal rules, (2) benefits from achieving policy goals, and (3) wider economic benefits generated by multiplier effects.[2]

Let us use some examples to further clarify the above-mentioned concepts. First, imagine the government wants to increase the number of young people starting graduate education by decreasing the tuition fees. Direct impacts are: the savings for the families, the increased enrolment in the universities, the increased number of graduates after a few years, etc. Indirect impacts would be the reduced rates of unemployment in a few years given that chances are smaller for highly educated people to become unemployed, or potentially lower crime rates as a consequence of reduced unemployment.

Second, consider the example of the Car Pass that was introduced by the Belgian government in 2004 to tackle the asymmetry of information that plagues the second-hand car market (PwC, 2016). The buyer has less information about a second-hand car than the seller. Since buyers are distrustful of the quality of a used car, they are (in certain cases) not willing to pay the true value of a used car, even if it's in good condition. Owners of high quality second-hand cars are aware of this market distortion and are not willing to sell at the current suboptimal market price. Therefore, the "lemons" (lower quality used cars) dispel the "plums" (higher quality used cars) from the market and the volume of used cars sold is suboptimal. The Car Pass is a legally required document issued to protect buyers of second-hand cars. Every garage, body shop, tyre centre, technical inspection centre, etc. has to register the mileage of each car in the Car Pass database whenever maintenance of repair is carried out. When the car is sold on the second-hand market, the seller must hand over the Car Pass document to the buyer. The benefit of this government intervention is a reduction in the asymmetric information between the sellers and buyers of second-hand cars. Before the issuance of Car Passes, a buyer that wanted some assurance concerning the quality of the car, would have to pay 50 euros for an independent inspection of the car. With the Car Pass, this expense is no longer necessary, and the consumer derives a direct benefit from avoiding a cost of 50 euros. However, it is plausible that the seller passes at least part of the cost of the keeping the Car Pass document on to the buyer, in which case the direct benefit accruing to the buyer would be less than the 50 euros of cost savings. The indirect benefits of the Car Pass include: (1) an increase of trust in the second-hand car industry, (2) an increase in road safety due to technical better cars, and (3) a decline in undeclared work to cars. This example demonstrates that regulatory benefits can be distributed over various

[2] Boardman, A., Greenberg, D., Vining, A., & Weimer, D. (2011). *Cost-Benefit Analysis, Concepts and Practice*. London: Pearson.

stakeholders (consumers, companies, sectors or markets and government). Notice that some stakeholders will gain, and others will lose.

In general, we recommend leaving the indirect benefits out of the quantification process. By thoroughly identifying the direct economic benefits of a government intervention, and thus by focussing in a proportionate manner on the most significant benefits, the *omission error* of a relevant indirect benefit can be minimised.

6. Dealing with uncertainty about underlying assumptions

In order to measure the impact of a planned government intervention, typically several assumptions have to be made regarding different parameters. For instance, in our example of establishing an LEZ in Warsaw, it would be possible to determine the benefit of the intervention by using an avoided cost approach. People driving environmentally unfriendly cars are denied access to an LEZ, which means that the benefit of the LEZ can be measured by monetising the value of the foregone emissions of those cars not being admitted to the LEZ anymore. In order to monetise the value of the emissions of the environmentally unfriendly cars, the current value of the following parameters should be known: (1) the number of cars that are banned, (2) the distance in kilometres those cars drive each year in the zone, (3) the CO2, NOx and other gasses those cars emit per kilometre, and (4) the cost per unit of emission for each of the gasses. It would be necessary to make multiple assumptions. For instance, one would have to make an assumption regarding the distance these environmentally unfriendly cars drive in the zone, because it is highly unlikely that it is known or available. This assumption is usually based on plausibility, rather than on probability. With a **sensitivity analysis**, the effect of uncertainty about certain assumptions can be revealed.

In a sensitivity analysis, the value of an assumed parameter varies in a reasonable interval to see if the magnitude and the sign of the net benefit change. Suppose that government officials from Warsaw and Poland find it plausible that each of the 20,000 environmentally unfriendly registered cars in Warsaw drives 500 kilometres per year on average in the city centre. Let's also assume that given the level of greenhouse gasses these cars emit, the cost these emissions impose on society, and the investment cost of installing the LEZ, the overall net benefit of the LEZ is positive (meaning it would be efficient idea to install an LEZ). It would then be advisable to conduct a sensitivity analysis to prevent that the decision on the LEZ be based on a faulty assumption on the number of kilometres. The policy makers handling the RIA of the LEZ could, in consultation with the government officials, decide that the range of 250 to 750 kilometres on average is a plausible range of values for the unknown parameter. If we were to calculate the net benefits for these lower and upper bound estimates for this parameter, and the net benefit remains similar (or at least does not change the net benefit in such a way that another policy option becomes more efficient) in both cases, then there is no need for further data collection because the results are robust to all likely values of the parameter. If, on the other hand, this is not the case, then there is a clear indication that more detailed data should be collected or more analysis should be conducted to reduce the uncertainties regarding the values of this variable. Now, in our example we only changed the number of kilometres the cars drive in the city centre. However, in a real RIA policy makers have to test all assumptions

(preferably simultaneously) to see whether (and to what extent) the outcome of the analysis changes. The sensitivity analysis is an indispensable component of any RIA. It allows policy makers involved in the RIA to minimise *forecasting and valuation errors* in the assumptions and thus to improve the robustness of the net benefit.

After having presented an overview of the economic theory underlying the analysis of economic benefits, the remainder of the present guide is dedicated to practical and hands-on guidelines for policy makers to identify and measure economic benefits.

PART II Practical guidelines on identifying and measuring economic benefits

In recent years, and under the initiative of policy makers of the European Commission and OECD, decision-making has increasingly been based on Regulatory Impact Assessments (RIAs). The use of RIAs helps institutions to develop evidence-based policies and decisions. The idea of an Impact Assessment is to compare possible outcomes of different policy options in the context of a government intervention to address a market failure. For each policy option, its impacts have to be identified, described and monetised in order to find the net benefit of the policy option.

The process of identifying, describing and quantifying impacts of a government intervention can be subdivided into the following five steps:

1) Identification of actors impacted by the policy option
2) Identification of impacts
    a. Costs vs. benefits
    b. Economic vs. non-economic benefits
    c. Tangible vs. intangible economic benefits
    d. Direct vs. indirect economic benefits
    e. One-off vs. recurrent economic benefits
3) Qualitative description of the economic benefits
4) Quantification/monetisation of the economic benefits
5) Comparison of the net benefits

Below, each step will be presented by means of a checklist. Each step, and its sub-steps, are thereafter explained in more detail. The checklist allows policy makers to keep track of their efforts to properly and comprehensively identify and measure economic impacts. The checklist has to be completed for each policy option.

1. Identification of actors impacted by the policy option

STEP 1: IDENTIFICATION OF ACTORS		
☐	I.	Consider which of the four actors are impacted by the proposed policy option.
☐	II.	For each actor that is impacted, describe which specific groups are impacted.
☐	III.	For each group that is impacted, describe how this group is impacted by the proposed policy option.

I. <u>Consider which of the four actors are impacted by the proposed policy option</u>

In general, government intervention can yield economic benefits for four actors: (1) consumers, (2) companies, (3) markets, and (4) institutions, which is shown at the end of Part II in Figure 3.

Let us introduce the example of a competent authority restricting the CO2 emissions of steel plants located near a residential area. In this example, four actors are impacted by the proposed policy intervention: consumers, companies, markets and institutions.

II. For each actor that is impacted, describe which specific groups are impacted

The idea of this section is that you describe which actors are influenced by a certain policy measure. The description of the actors should be as specific as can be (for instance 'the producers of meat products' is a more specific description than 'the producers of food'). The specific actors can be described based on a geographical criteria (e.g. all households that live in a 15 kilometre radius of a steel plant), an operational criteria (e.g. all companies that were founded after 2016), a sectoral criteria (e.g. all agricultural companies), a consumption criteria (e.g. all consumers of milk), etc. Often, external (scientific) sources and/or literature have to be consulted in order to define the target group. In our example, it is possible that scientific research would prove that only people living in a range of 15 kilometres of a steel plant are impacted by CO2 emissions of that plant. If that would be the case, the impacted consumer group for our example could be described as: the number of people living in residential areas within a range of 15 kilometres from steel plants.

As the emission restriction is applicable to all companies in a particular market or sector, and not to only one, single company, the sector of steel manufacturers and its relevant subsector(s) should also be described in order to get a clear view of the size of the sector. This helps policy makers to better understand how the particular market or sector could be impacted by imposing specific obligations, and to anticipate certain practical issues regarding those obligations. The following questions can be answered to get a better understanding of a market or sector:

- How many companies are active in the market/sector?
- How can their activities be described?
- What is the market share of these companies in terms of sales?
- What is the average turnover of these companies?
- What are specific or common characteristics of these companies? Are they subsidiaries of international groups? Are they export-oriented? Are they located in a regional cluster?

III. For each group that is impacted, describe how this group is impacted by the proposed policy option

For **consumers** or households, the effects of regulation usually concern:

- The market price, quantity and choice of goods and services;
- The level of information and trust consumers have in the market;
- The quality, safety and sustainability of goods and services;
- The costs consumers incur because of the proposed regulation.

Special attention has to be paid to vulnerable consumers and households, like children, elderly people, single parent families and minority groups.

For **companies** or producers (on a micro level), the effects of regulation demonstrate changes in:

- The cost of doing business consists of operating costs (costs related to production), regulatory costs (costs related to regulation) and financial costs (costs related to financing the company);
- The level of innovation and research.

In light of the 'Think Small First' principle of the European Commission, the impact on SMEs should be given a great deal of attention.

Consumers and companies act and interact on different types of **markets**, including: markets of goods, markets of services, the labour market, sectoral markets, regional markets, national markets, the international market, etc. Government intervention can impact the determinants for the quality of those markets:

- Entry barriers and regulatory convergence;
- Free movement of people, goods, services and capital;
- Access to labour, goods, services and capital;
- Competition.

Lastly, government **institutions** are likely to be affected by government intervention, which reflects most importantly on the regulatory costs domestic institutions and administrations bear. The next section discusses the regulatory costs in more detail.

Impacts on these four actors may reflect changes in **macroeconomic factors** like employment, investment and economic growth.

POSSIBLE IMPACTS OF GOVERNMENT INTERVENTION FOR DIFFERENT ACTORS					
Impact		Consumers	Markets	Companies	Institutions
Goods and services	Price	•			
	Quantity	•			
	Choice	•			
	Accessibility	•			
Consumer protection	Information	•			
	Knowledge	•			
	Trust	•			
Quality	Safety	•			
	Sustainability	•			
Entry barriers			•	•	
Regulatory convergence			•	•	•
Free movement	People	•	•	•	
	Goods & Services	•	•	•	
	Capital	•	•	•	
Access to	Labour		•	•	
	Goods & Services		•	•	
	Capital		•	•	
Competition	Market structure		•	•	
	Market share		•	•	
Cost of doing business/ Cost of complying	Operating costs	•		•	
	Regulatory costs	•		•	•
	Financial costs	•		•	
Innovation and research			•	•	
Macro-economic impacts		•			

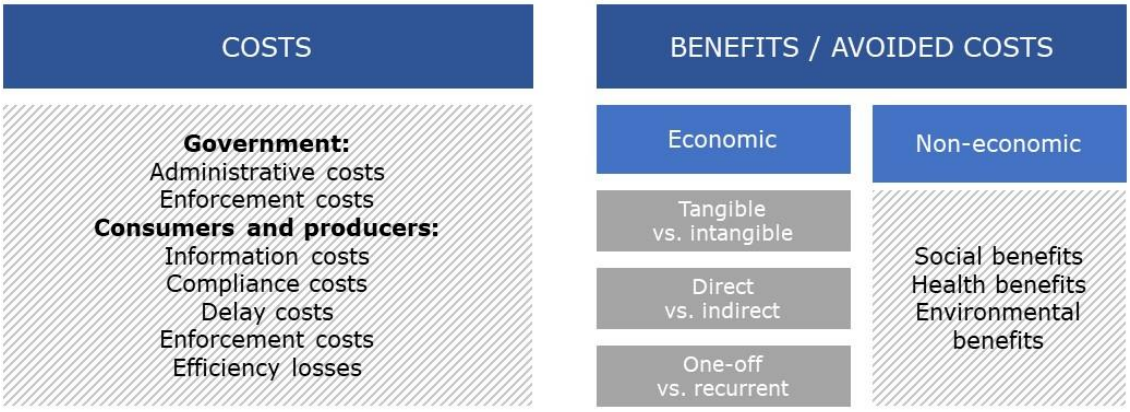
2. Identification of impacts

STEP 2: IDENTIFICATION OF IMPACTS		
☐	I.	Identify all costs and benefits stemming from the proposed policy option.
☐	II.	Consider proportionality regarding the identified benefits.
☐	III.	Differentiate between economic and non-economic benefits, and select only economic benefits.
☐	IV.	For each economic benefit, differentiate between tangible and intangible benefits, and select only tangible economic benefits.
☐	V.	For each economic benefit, differentiate between direct and indirect benefits.
☐	VI.	For each economic benefit, differentiate between one-off and recurrent benefits, and determine duration of recurrent economic benefits.

No quantification without benefits to quantify. It is therefore essential to have a complete understanding of the impacts of a proposed policy intervention. The process of identifying impacts should start with listing all the costs and benefits linked to the government intervention. In light of

this exercise to quantify regulatory benefits, only all of the identified benefits should be labelled to allow for a structured and complete quantification in the RIA. Figure 1 provides a schematic overview of the classification of benefits that should be made, as well as an overview of the types of benefits that should be selected in the process of identifying impacts. Below, the six sub-steps of step 2 will be discussed in detail.

Figure 1: Classification and selection of costs and benefits



I. Identify all costs and benefits stemming from the proposed policy option

In order to identify all costs and benefits stemming from the proposed policy option, a holistic view on the effects of the option should be applied. As discussed above, it is useful to start with the identification of the actors that are impacted by the policy option, before identifying and clarifying the actual impacts.

Note that costs and benefits are often two sides of the same coin and what could be a cost for one actor is likely a benefit for another actor. Think for instance of the government intervention to restrict CO2 emission of a steel plant near a residential area. On the one hand the nearby residing citizens will benefit from this restricted emission, because their health will probably be less affected by the pollutants. On the other hand, the steel plant will bear costs due to the government intervention. The plant will have to install filters and other technical equipment in order to meet the emission restrictions.

Building further on the example of the emission restriction for the steel plant, the concept of avoided costs can be illustrated. The benefit to the health of the nearby residing citizens is actually an avoided cost. The installation of a filter will lead to less respiratory problems for citizens, meaning that they will have to spend less money on medicines and medical consultations. Another cost that can be avoided by imposing the emission restriction is the productivity loss caused by citizens who are on sick leave or who are not feeling well at their workplace and are likely to underperform.

According to Marneffe & Vereeck (2011), a sound understanding of regulatory costs is essential to qualitative and efficient regulation. They identified sixteen types of direct regulatory costs that governments, citizens and companies bear to prepare and implement

regulatory obligations, as well as two indirect regulatory cost types of regulation. The most relevant cost types of Marneffe & Vereeck (2011) are listed below, supplemented with the subdivision of enforcement costs that is proposed by the European Commission in Better Regulation Toolbox #59:

1) Direct regulatory costs borne by government:
    a) Administrative costs;
    b) Enforcement costs:
        i. Monitoring costs;
        ii. Inspection costs;
        iii. Adjudication costs;
        iv. Litigation costs.
2) Direct regulatory costs borne by citizens and companies:
    a) Information costs;
    b) Compliance costs (which can be one-off or recurrent costs):
        i. Administrative burdens;
        ii. Start-up or one-off costs;
        iii. Operational or recurring costs;
    c) Delay costs;
    d) Enforcement costs.

The most relevant direct cost types are also presented in the table below with an example.

Direct regulatory costs borne by government	
Cost type	Example of cost type
Administrative costs	If the government were to implement a mandatory three-year certificate for all employees in the food industry handling foodstuffs, it would need to process all these certificates to make sure that everyone has the necessary skills to handle the food. Processing these certificates would impose a significant administrative cost on the government.
Enforcement costs a) Monitoring costs b) Inspection costs c) Adjudication costs d) Litigation costs	The costs of organizing complaint procedures and other forms of administrative redress. The costs of checking compliance by the actors subject to the legislation. The costs of using the legal system to settle disputes. The costs of legal representation.
Information costs	In preparation for the entry into force of the General Data Protection Regulation (Regulation EU 2016/679), a company administrator may need to participate in a workshop to get to know the impact of the Regulation

	on the company and would therefore bear an information cost.

Direct regulatory costs borne by citizens and companies	
Compliance costs (which can be one-off or recurrent)	
a) Administrative burdens	In the light of the Fourth Anti-Money Laundering Directive of the EU, Member States have to open a register containing all of the companies' ultimate beneficial owners (UBO). Suppose the government provides the companies with an e-government application via which companies can register all their ultimate beneficiaries. Collecting and entering data about those beneficiaries is an administrative burden.
b) Financial costs (Capital costs)	To prevent VAT-fraud in cafes and restaurants, the government could require companies to install a cash register that works with a black box. Such a cash register records every ticket and makes it impossible to delete tickets. The investment in this type of cash register with black box brings about capital costs. Also in the case of having to change resources or input materials because of a ban or requirement by the government, companies will bear capital costs to change their production processes.
c) Operating costs	If the government would require ammunition manufacturers to first have an external quality check carried out on a shipment destined for export, the manufacturers would bear the operating cost of hiring an external inspector each time they export.
Delay costs	Assume that a company has created a new product and they are ready to take it to the market. However, they are waiting for 6 months on their patent application to be processed by the government agency. The company is hindered to access the market and suffers the loss of not being able to sell their product for six months.
Enforcement costs a) Adjudication costs b) Litigation costs	The costs of using the legal system to settle disputes. This includes the costs of legal representation.

II. Consider proportionality regarding the identified benefits

When drafting a RIA, policy makers should focus on the most significant benefits. Take for instance our example of the CO2 emissions restriction on a steel plant, and suppose that the health benefit of this intervention (due to less cancers, less respiratory problems, etc.) is about of 200 million euros. In that case, it would be disproportional to include the benefit of having to light the streets in the neighbourhood of the plant less because of the reduced amount of root particles in the air (and thus the less fogging).

III. Differentiate between economic and non-economic benefits, and select mainly economic benefits

Most government interventions not only create economic benefits to individuals and society, they also induce social benefits. Regarding our example of the emission restrictions imposed on a steel plant near a residential area, it is possible that the reduced emissions positively affect the happiness and wellbeing of the citizens living in the residential area. Due to the difficulty of quantifying and monetising those non-economic benefits, we recommend focussing on (1) economic benefits (for which market prices or non-market valuation techniques can be used to monetise) and (2) direct effects.

IV. For each economic benefit, differentiate between tangible and intangible benefits, and select only tangible economic benefits

In general the intangible economic benefits are (more) difficult to quantify and monetise. Suppose for example that some local newspapers report on the emission restrictions for the steel plant and the increase wellbeing of nearby residing families due to the reduced emissions. The residential area will become more attractive thanks to the news coverage and thus one could argue that the housing market improves. Monetising the improved attractiveness of the residential area is burdensome given that the causality between the news coverage and the increased willingness to pay of potential buyers of the houses has to be established. Monetising this benefit would also not pass the Principle of Proportionality. We advise the drafters of a RIA to focus predominantly on those economic benefits that can be expressed in monetary terms.

V. For each economic benefit, differentiate between direct and indirect benefits

As mentioned above, quantifying indirect economic benefits is usually time and resource consuming. By thoroughly identifying the direct economic benefits of a government intervention, and thus by focussing in a proportionate manner on the most significant benefits, the *omission error* that arises because not all (indirect) benefits are included, can be minimised.

VI. For each economic benefit, differentiate between one-off and recurrent benefits, and determine duration of recurrent economic benefits

Regarding the impacts of regulatory intervention, a distinction has to be made between one-off and recurrent benefits. A one-off benefit is a benefit that will occur only once in time.

Think for instance at the possibility that some countries offer to citizens to declare illegal money. The illegal money that is declared, is only taxed once and offers a benefit to the treasury. A recurrent benefit is a benefit that will occur repetitively on a monthly, quarterly, yearly or multi-yearly basis. If for example start-ups would be exempted from quarterly VAT declarations during the first three years of business, these companies would benefit four times in each of the coming three years. Besides being aware of these recurrent benefits, policy makers should discount these recurrent benefits in their RIA (in this case reduced administrative burden).

To weigh different policy options addressing a market failure, impacts that will (continuously) emerge at a later time, should be accounted for in calculations made today. By discounting future impacts, benefits occurring at a later time can be quantified in monetary terms of today, i.e. the **present value** of those future benefits. For instance, an investment of 1.000.000 euros in 2025 represents a net present value of 813.092 today if we use a discount rate of 3%. The social discount rate is used to convert future benefits – valued at the applicable prices of that future moment – to their present values. Note that both monetary as non-monetary benefits should be discounted. Think for instance of a government intervention that will save 200 traffic victims during 10 consecutive years, or that will prevent the felling of 500 trees during 5 consecutive years. After monetising these benefits of the policy measure, they should be discounted in order to find the present value of those benefits. We invite you to read Better Regulation Toolbox #61 'The use of discount rates' of the European Commission for more detail on discounting future benefits.

Before assessing the impacts on its relevant stakeholders in detail, the analyst should consider three dimensions of relevance: whether the benefits gained through the implementation of the policy still justify the costs of its implementation; whether the regulation does indeed impose the least burden on the impacted stakeholders as intended, and whether its alteration is meaningful from a cost-effectiveness perspective.

Justification of costs

- Do the benefits of the proposed regulation justify the costs?

Imposing the least burden

- The analyst should assess whether the regulation imposes regulation on entities that are already subject to other related regulations or regulations implemented by the same body. If so, what is the cumulative burden and costs of the requirements imposed on the regulated entities? Are these costs justified by the benefits?
- If this regulation will impact on small businesses at large scale, could it be altered in such a way to reduce the negative impacts while maintaining its purpose?
- Are there any logical alternatives to this regulation that could reduce its burden to the state, regional or local level without compromising its actual intended purpose?

Meaningfulness

- Would it be possible to alter the regulation in such a way to achieve greater cost-effectiveness while still achieving the intended results?

3. Qualitative description of the economic benefits

STEP 3: QUALITATIVE DESCRIPTION OF BENEFITS		
☐	I.	Indicate which impact is relevant (column 1 of the following table)
☐	II.	Describe the magnitude of the impact qualitatively (in column 3 of the following table) by answering the guiding questions (in column 2 of the following table).
	III.	Select relevant indicators that assess the scope and magnitude of the impact. Column 4 (of the following table) has some general indicators for each impact as well an example of some specific indicators.

How to use the guide on qualitatively describing economic indicators?

1) The first column of the table below presents a list of impact categories that could be relevant in the identification of meaningful indicators. The job of the analyst here is to assess if, which and how will the four main actors (consumers, markets, companies and institutions) be impacted by the assessed regulation. It is important to remember that some of these categories will not be affected by the regulation and thus, don't need to be covered by the RIA.
2) After selection of the relevant impact categories, the analyst should look the guiding questions listed for each of them in the second column. Please note that the guiding questions remain *guiding,* just setting the tone of the assessment. As a rule of thumb, when relevant, the guiding questions should be answered, but additional questions that the stakeholders found relevant during the consultations might be of even more crucial importance.
3) In the third column we offer illustrative examples for each of these impact categories. The examples are offered solely for illustration and to offer an idea on how determinants can be illustrated and integrated with other relevant identified determinants. The intention of the examples is to showcase a qualitative description of the indicators identified and an incentive to answer the questions in a cohesive manner rather than crossing off items off a checklist.
4) Finally, we have identified a list of relevant general and specific indicators that can be taken into account when assessing the effectiveness of the policy. As in the case of the questions, these indicators are *guiding* and *non-exhaustive*. Each policy has specific indicators that are relevant only for it, and it is of crucial importance to identify all the meaningful indicators – general and specific - and correctly assess them in order to draw a sound impact assessment of our regulation.

1. CONSUMERS			
1.1 GOODS AND SERVICES			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
1.1.1 Price	• Does the policy option have significant consequences for the financial situation of individuals / households, both immediately and in the long run? • Will the regulation result in an increase or decrease in overall prices or prices for specific commodities or services? If so, which are the main commodities/services affected? • Is the commodity/service price sensitive? • What is the expected change in prices resulted from the implementation of the regulation? • Will the price change affect a certain group of consumers or all consumers?	Let us consider a new policy implemented in country A that has the purpose of decreasing VAT on cars from X% to Y%. The result will be a decrease in the price of cars and a higher volume of automobiles sold. The policy will have a significant and immediate effect and will result in a total decrease in VAT on cars from 200M to 150M. The benefit for the consumers of cars will be thus 50M per year since they no longer have to pay this amount of VAT. Indirect results would be considered the decreased usage of public transport and thus the revenues that come along with it, decrease in the quality of air and the health expenses associated, more crowded traffic and increased number of injuries and deaths and increased traffic that would result in time spent on the road.	General Indicators • Consumer Price Index (CPI) • People at risk of poverty or social exclusion and people who escaped poverty or social exclusion • Median household income • Annual Net earnings • Households disposable income, spending, savings, debt, financial assets, financial transactions, net worth Examples of Case-Specific Indicators • Price index of cars • Evolution of price of cars

1.1.2 Quantity	<u>Existing products and services:</u> • Will the regulation result in an increase or decrease in the overall quantity of commodities/services produced? If yes, please specify which are the main commodities/services affected. • What is the current quantity and for the commodities/services impacted? • What is the magnitude of the impact the policy is expected to have on the quantity of commodities/services?	In country X there are only two operators of telecom (Yellow and Todofone). In area Xc which is close to the national border, neither offers 4G coverage to the consumers, and thus internet access is very limited. Thanks to a new regulation, two2 additional telecom companies enter the market and offer new products in country X which also include 4G coverage in region Xc, attracting 250.000 new customers. First of all, the quantity of products and services available to consumers increases. Now 250.000 additional consumers have new services, more specifically 4G connection. Furthermore, one could also expect the prices in the market to decrease given that there are four suppliers instead of two. Moreover, the market share is now more evenly distributed with each company owning between 25-30% of the market, with a shift towards oligopoly (see market effects).	<u>General indicators</u> • Volume of commodities/services supplied • Number of new commodities/services in the market • Number of new consumers in the market <u>Examples of Case-Specific Indicators</u> • Number of new telecom services consumed

1.1.3 Choice and accessibility	• Does the regulation significantly impact consumer's ability to benefit from market's goods or to access commodities and services from inside or outside the country? • What is the current level of accessibility to the main commodities or services affected? • What is the expected magnitude of impact on the choice and accessibility the consumers have for the main commodities or services affected? • Will the regulation result in an increase or decrease in overall accessibility and choice for all/specific commodities/services? If yes, which are the main commodities or services affected? • What is the change in accessibility resulted from the implementation of the regulation compared to the accessibility in the rest of the world? • Will the regulation result in new commodities or services introduced to the market?	Let us consider the previous example where country X has only two operators of telecom, Yellow and Todofone and thanks to a new regulation, there are two additional telecom companies that provide services in a remote area, resulting in 250000 new customers. Besides having an impact on the quantity of services provided, because each provider comes with a different offer, there is more choice for customers who also have more access to the desired services – four providers instead of two to choose from with a nearly doubled offer. The increased competition results in a slight decline in prices, making them accessible to a wider spectrum of the population.	<u>General indicators</u> • Reduced obstacles to the import and export of goods • Number of new consumers • Number of consumers that have new access to the commodity or service at hand • Number of enterprises supported to introduce new commodities/services to markets/firms. <u>Example of Case-Specific Indicators</u> • <u>Number of new telecom providers by type of service offered</u> • <u>Number of consumers with new access to telecom services</u> • <u>Number of new telecom services consumer by type</u>

1.2 CONSUMER PROTECTION			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
1.2.1 Information and knowledge	• Is there a perceived change in the access that consumers have to information as a result of the implementation of the regulation? If yes, which are the main products affected? • What is the current level of information and knowledge that consumers have? • Will the regulation result in an increase or decrease in the overall level of information and knowledge that consumers have as a result of this policy? • What is the magnitude of the impact the policy will have on the information and knowledge that consumers have? • Is there currently a risk for consumers of having not enough information? • What is the change in the degree of better decisions taken as a result of the change in the level of information and knowledge? • How does the additional access to information that consumers perceive translate into benefits?	The Car Pass was introduced by the Belgian government in 2004 to address the asymmetry of information that customers faced. Oftentimes, the buyer had less information about a second-hand car (than the seller) which resulted in decreased trust and a lower willingness to pay the full price for a second-hand car regardless of its condition. Sellers of second-hand cars were also aware of potential buyers' distrust, but remained reluctant to sell the cars at the lower prices, leading to an estimated decrease in volume of car sales of 10%. If buyers of cars wanted more certainty on the quality of the car they could hire an external expert to examine the car and pay 50 euros. The introduction of the Car Pass, which requires each owner of the car to register mileage each time maintenance or repair work is done increased consumer trust in the market and contributed to a sales increase of 15% in the second hand car market. The implementation of this policy tackled not only suboptimal prices, but also the quantity of cars sold, trust, and the asymmetry of information that existed, and the road safety due to regular checkups of cars.	<u>General indicators</u> • Percentage increase consumers that have gained access to a certain commodity/service as a result of the regulation <u>Example of Case Specific Indicators</u> • Number of complaints about unfair practices in the second hand car market

1.2.2 Trust	• Does the policy option have significant consequences for the trust that consumers perceive at the commodity/company/market/economy/institutions? If yes, which are the main commodities or services impacted at which level? • What is the current level of trust that consumers perceive at commodity/company/market/institution/economy level? • What is the magnitude of impact the regulation has on the overall level of trust? • Does the regulation impose adjustment costs on the consumers? • What is the change in overall consumer satisfaction as a result of this regulation? • To what extent has consumers' trust in the economy/institutions/market/commodity increased?	Let's go back to our example above concerning the introduction of the Car Pass to address the asymmetry of information that customers faced. The main reason that led to a decrease in the number of second-hand cars being sold was the lack of information about the car specifications that customers were faced with. This led to decreased overall trust of the buyers in the sellers of cars (professional sellers as well). The introduction of the Car Pass not only increased the level of information customers were provided, but also increased trust on their side. The consequence was an increase in the number of cars sold.	<u>General indicators</u> • Weighted average of overall customer satisfaction • Consumers Confidence Index • Number of complaints about commodities/services • Number of complaints about market functioning <u>Examples of Case-Specific indicators</u> • Perceived trust as a result of the new regulation

1.3 QUALITY			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
1.3.1 Safety	• Does the policy have significant consequences for the safety of commodities and services as a result of the regulation? • What is the current level of safety of the main commodities/services involved? • What is the magnitude of the impact the regulation will have on the overall safety of the commodities involved? • Will the regulation result in an upward or downward change in overall safety of commodities or services? If yes, which are the main commodities/services affected? • What is the change in the level of safety resulted from the implementation of the regulation?	IKEA faced a number of product liability complaints related to toddler mattresses Vyssa and the cribs that come together with them. Due to poor safety measures, it has been discovered that toddlers were at risk of being trapped in between the mattress and the grids guarding the crib. 169.000 mattresses were recalled by the company. Later, after it was revealed that the mattresses did not comply with the open flame standard in the United States and a further 34.800 were being recalled, IKEA was obliged to refund the parents in full, even in the absence of a customers' receipt. The incident produced a limited number of victims. The damage is measures by the medical costs the children and parents have suffered. The estimated impact was 45.000 euros per injured child. The number of incidents is low and is only 12 throughout Europe and the US. The decision to remove the mattresses from the market came thus as a result of safety concerns estimated in monetary terms. The call for a full refund impacted the customers since they had the choice to buy a safer product as well as the company which had substantial financial and reputation losses.	<u>General indicators</u> • Number of complaints registered about faulty, dangerous or hazardous commodities or services • Perceived safety of commodities/services by the consumers • Number of commodities or services recalled by manufacturers due to safety reasons • Potential size of incidents and chance of occurrence (risk and magnitude of effect) <u>Examples of Case-Specific indicators</u> • Percentage change in number of incidents as a result of the regulation • Decrease in number of victims of incidents as a result of the regulation • Spill-over effect – number of companies that adjusted their safety

			standards as a result of the regulation.
1.3.2 Sustainability of products	• Does the policy option have significant consequences for the sustainability of commodities or services? • What is the current life-span of the commodities affected? • What is the magnitude of impact the policy will have on the life-span of commodities? • Will the regulation result in an upward or downward change in the level of sustainability perceived? If yes, which are the main commodities/services affected? • What is the change in sustainability practices and how does this translate into benefits (savings on spared or alternative electricity, etc.)?	Suppose in country X, a new policy has been implemented, which requires the producers of refrigerators and freezers to meet minimum energy performance standards (MEPS) and also display the Energy Rating Label (ERL). The policy has multiple impacts: - On the sustainability of products by setting the threshold for MEPS higher and thus resulting in lower energy consumption and a longer lifespan or at least 2 years or the commodities. - On the asymmetry of information that occurred from too little details displayed on the labels regarding the energy rating and consumption of the appliance. This resulted in better informed decisions taken by the consumers and more trust in the industry as well as a reduction in the price of energy used as a result of the decrease in total energy consumed. On the same note, customers started investing more in energy-efficient products with the purpose of paying less electricity costs which in turn resulted in increased sales for the appliance producers.	<u>General indicators</u> • Total waste generated (kg/person) • Number of bodies that switched to more sustainable technologies, production or practices • Life span of commodities or services <u>Examples of Case-Specific indicators</u> • Percentage change in overall energy consumption • Percentage change in sales of energy-efficient appliances • Spill-over effect: percentage of consumers switching to overall more energy-efficient practices

1.4 REGULATORY COSTS			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
	• Does the regulation have a significant impact on the information costs, administrative burden, operational costs and enforcement costs the consumer faces? If yes, what are the main effects? • What is the current level for the information costs, administrative costs and enforcement costs the relevant customers face? • What is the magnitude of impact the regulation will have on the information costs, administrative burden, operational costs and enforcement costs customers face? • Will the regulation impose additional adjustments, compliance or transaction costs on business? • What is the change in costs demanded such as information costs, compliance costs (including administrative burdens, start-up costs and operational costs), delay costs, enforcement costs, etc?	Mr Jim wants to build a new addition to his villa in the form of a garage. In order to do it, he needs in total four permits from the government concerning the checking the safety, ownership, and other issues of societal importance. In order to receive the four permits Mr Jim needs to wait four months during which he needs to rent a garage that costs about 500 euros. Further, after the annex is finally built, Mr Jim needs to pay for a building inspector to check the compliance with the rules. Now, a new policy is in place in which citizens and businesses can request all the necessary permits online with the help of their e-ID. The standard waiting time for the permits is reduced to 10 days. The benefits that Mr Jim enjoys relate to avoided *information costs* (because he would be spending time to look up all the documents and the requirement), *delay costs* (because he does not have to rent the garage) and *administrative costs* (because the new online procedure requires no visit to city hall to file and pick up the permits).	General Indicators • Time waiting for the government to implement regulations • Time required to comply with information requests • Time required to comply with inspection Examples of Case-Specific Indicators • Decrease in actions undertaken and the respective costs associated for obtaining a construction permit • Decrease in time spent informing about the relevant permits and actually applying for them

1.5 VULNERABLE CONSUMERS			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
	• Does the regulation have significant impact on any category of vulnerable groups? If yes, which are the main groups affected and how? • What is the current status of the relevant vulnerable groups with regard to the objectives of the regulation? • What is the level of magnitude the regulation will have on the vulnerable populations? • Will the regulation result in the benefit or detriment of the affected vulnerable groups? • What is the change that the policy will bring that will benefit vulnerable groups?	A new policy has been implemented to give automatic rights to assistance to people with disabilities. Before the regulation, people would need to apply for assistance benefits personally and many of them would be too embarrassed to apply. With the new policy in place, each person registered as having a disability receives automatic subsidies, resulting in an increase of 30% in persons that get the benefits. This results not only into better quality of life and increased welfare for the disabled but also a decrease in administrative burden and a decrease in information costs.	General indicators • Decrease in the number of subjects negatively impacted by the regulation • Percentage of vulnerable population that has access to products and/or services in the market • At-risk-of-poverty rate by poverty threshold, age and sex Examples of Case-Specific indicators • Percentage increase of members of vulnerable populations that make use of the rights to assistance • Change in the quality of life and welfare of people with disabilities

2. MARKETS			
2.1 ENTRY BARRIERS & REGULATORY CONVERGENCE	**GUIDING QUESTIONS**	**QUALITATIVE DESCRIPTION**	**INDICATORS**
	• Does the policy have significant consequences on the entry access of certain commodities or services to the market? If yes, which are the main commodities/services affected and how? • What is the magnitude of impact that the regulation will have on the access of commodities and services to the market? • Does the regulation entail the introduction or withdrawal of certain commodities or services from the market? • What is the overall change in the access to the market as a result of the regulation? • Does the regulation erect entry barriers that might reduce innovation by impending new entrants into the market? • Does the regulation tend to create or enhance market power and reduce the economic efficiency of the market?	In country X, one of the main requirements to open a travel agency was a diploma in tourism (at least at Bachelor level). After policy changes, this requirement no longer holds so a person who wants to open up a travel agency no longer needs to have a tourism diploma. This policy change has a high impact on the business sector since a large number of travel agencies can open without facing barriers and regulatory burdens. Moreover, the new entrance of for instance 100 new travel agencies results in more opportunity and lower prices for consumers, leading to increased tourism both inside and outside the country, resulting in a flow of extra 5M € per year (travel costs, merchandise, money spent by tourist, foreign investment as a result of increased tourism, etc.).	<u>General indicators</u> • Share of firms introducing innovations new to the company or the market • Number of new producers that have access to the market • Decrease in administrative and regulatory burdens on both new and existing SMEs • Number of new firms by sector <u>Examples of Case-Specific indicators</u> • <u>Number of new travel agencies opened in the past years</u>

2.2 FREE MOVEMENT			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
2.2.1 Of people, goods, services and capital	• Does the policy have significant consequences for the free movement of people, goods, services and capital? • What is the current number of people or services engaged in cross-border mobility initiatives? • What is the magnitude of impact that the regulation will have on the freedom of movement of people, goods, services and capital? • What is the increase in the number of participants in cross-border mobility initiatives as a result of the regulation? • To what extent has the regulation increased the number of exports? • What is the perceived change in complexity and willingness to participate in cross-border mobility initiatives? • What is the current capital volume resulted from cross-border mobility initiatives?	Thanks to the New Services Directive Directive 2006/123/EC at EU level, PlumBob, the plumbing company of Mr Bob can extend its practices from country A to country B, after meeting unimagined success and hiring more than 20 people in the last year. Because in country A the market is already saturated with plumbing companies, Mr Bob thought it would help his business to open a new office in country B, where the number of competing plumbing services is 45% lower. Mr Bob opened the new facility in country B where he hired 7 nationals from country B and transferred two employees from country A to country B. The revenues of Mr Bob increased with 30%, with positive benefits for both country A and B. So Mr Bob moved his capital to country B to open up a new company. Furthermore, he increased the number of employees in country B, and transferred two employees from country A.	General indicators • Number of participants in cross-border mobility initiatives • Number of exporting and importing SMEs • Ratio between imports and exports • Percentage of fully liberalised imports • Changes in the proportion of SMEs exporting • Perceptions of complexity and willingness to bid across borders among firms active in public procurement • Ratio between number of barriers to free movement of capital identified and number of barriers lifted as a result of the regulation Examples of Case-Specific indicators • Number of simplification measures adopted for enterprises and SMEs

			• Decrease in the difference in costs of cross-border transactions in securities to the levelled domestic transition in securities • Increase on gross value added (GVA) in supported holdings • Number of new foreign companies in the market
2.2.2 Access to labour, goods, services and capital	• Does the policy have significant consequences for the access to labour, goods, services and capital? • What is the magnitude of impact that the regulation will have on the access to labour, goods, services and capital? • What is the number of free movement of capital barriers lifted as a result of the regulation and what are the results of these? • What is the perceived change in complexity and willingness to access labour, goods, services and capital cross-border?	The new policy in country X allows for flexible jobs, meaning that working after reaching the retirement age is no longer forbidden. As a result, many people past the retirement age have the option of receiving for instance 60% retirement benefits combined with a 40% wage for a part-time job. This policy not only increases the quality of life for the people involved, but also the availability of labor. As a consequence, 230.000 workers are now willing to take up a new part time job which they would not have done otherwise. In general, the impacts on quality of life and availability of labor are more difficult to quantify, but the increases in welfare are more straightforward to measure since we can look at total income for the people involved.	<u>General indicators</u> • Number of participants in cross-border mobility initiatives • Perceptions of complexity and willingness to access labour, goods, services and capital cross-border among firms active in public procurement • Ratio between number of barriers to free movement of labour, goods, services and capital identified and number of barriers lifted as a result of the regulation <u>Examples of Case-Specific indicators</u> • <u>Percentage increase in labour force as a result of the regulation</u>

			• Number of companies that employ workers that combine pension and part-time working

2.3 COMPETITION			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
2.3.1 Market structure	• Does the policy option have significant impacts on the market structure? If yes, what are the main impacts? • What is the current market structure? • What is the magnitude of impact that the policy has on the market structure? • What are the main changes that this regulation imposes on the market structure? • What is the level of market penetration including the expansion of existing markets and the creation of new markets? • Is there a company that owns more than 40% of the market share or 3 companies that together own at least 70% of the market? • Will the regulation entail stricter regulation of conduct of one or more particular businesses? If so, what will be the benefits gained?	Let's consider again the previous example with the two telecom operators in country X (Yellow and Todofone). We already highlighted that the regulation which allows the entry of two new providers has benefits in terms of price, quantity and choice. Besides benefits at consumer level, the market structure is now more heterogeneous, with more actors offering the same products and having a liberty of setting their own price threshold both for old and new technologies. The market structure becomes more competitive and the market share of the two existing operators will decrease.	General indicators • Number of enterprises cooperating with the implementing institution • Market penetration, including expansion of the existing markets and creation of new markets and competitiveness of the operators • Share of participating firms introducing innovations new to the company or the market • Presence of 3 companies that together own more than 70% of the market Examples of Case-Specific indicators • Number of new telecom operators that penetrated the market in the last year • Share of participating firms bringing new telecom services to areas that did

			not previously have access to these services • Percentage change in telecom market ownership
2.3.2 Market share	• Does the policy have significant impacts on the market share? If yes, which are these impacts and which are the main markets affected? • What is the current market share for the relevant markets? • What is the magnitude of impact the regulation has on the market share? • Is there a company that owns more than 40% of the market share or 3 companies that together own at least 70% of the market? • What are the main changes that the market share has undergone as a result of this policy ?	The example above, describing the changes that a new regulation permitting more telecom providers to enter the market can depict its applicability also in the case of market share. Encouraging new providers increased the level of competition and reduced prices. But the increase in the number of participants means the telecom market is split differently - the market share is now more evenly distributed with each company owning between 25-30% of the market, with a shift towards oligopoly (see market effects). This is a good example to show the cross-section applicability of a direct impact which has a spill-over effect on other indirect and less obvious impacts.	General indicators • Regular increase in the number of liability companies • Presence of a company that has more than 40% share of the market • Presence of 3 companies that together own more than 70% of the market Examples of Case-Specific indicators • Share of participating firms bringing new telecom services to areas that did not previously have access to these services • Percentage change in telecom market ownership

3. COMPANIES			
3.1 COST OF DOING BUSINESS	**GUIDING QUESTIONS**	**QUALITATIVE DESCRIPTION**	**INDICATORS**
3.1.1 Operating costs	• Does the regulation have significant impacts on the cost of doing business? If yes, which are the main impacts the regulation has created? (Information costs, administrative burden, delay costs, compliance costs, enforcement costs) • What is the current level of operating costs the companies face? • What is the magnitude of impact the regulation has on the cost of doing business? • Does the regulation affect the production or consumption of commodities and services in Poland? • Will the regulation impose additional operating costs on business? • What is the amount of support received by local businesses to promote their competitiveness? • What is the capital accumulation rate?	In country A, a new policy has reduced the emission standards by relaxing the requirements of companies to buy emission filters and to hire only service providers that guarantee the usage of emission filters. This policy leads to a decrease in compliance costs and information costs for the companies that are new to the market, saving them some investments as well as cost of figuring out which filters were required.	<u>General indicators</u> • Additional operating costs by type • Percentage change in costs and/or availability of essential input (raw materials, machinery, labour, energy, etc) • Percentage change in the costs of intermediate inputs and production related factors such as labour and capital. • SMEs receiving business and innovation support services to increase their competitiveness • Support for the local production • Capital accumulation rate • Market transaction costs (information costs, search costs, negotiation costs, contract costs, policing costs)

	• How does the regulation affect the cost or availability of essential inputs (raw materials, machinery, labor, energy, etc)		• Time waiting for the government to implement regulations • Time required to comply with information requests • Time required to comply with inspection <u>Examples of Case-Specific indicators</u> • <u>Decrease in information, search, negotiation and contract costs for employing new service providers</u> • <u>Decrease in time required to comply with information requests and inspection checks for emission filters</u>
3.1.2 Regulatory Costs	• Does the regulation have a significant on the regulatory costs a company faces? If yes, who are the main affected actors? • What is the current level of regulatory costs the relevant companies face? • What is the magnitude of impact the regulation will have on the regulatory costs companies face?	Mr Jim wants to build a new facility for his restaurant. In order to do it, he needs 4 permits from the government on different topics checking the safety, ownership, and other issues of high relevance. In order to receive the 4 permits Mr Jim needed to wait 4 months. During this waiting period he lost revenues of around 25000 euro (this represents the delay costs). Now, a new policy allows citizens to request all the necessary permits online with the help of their e-ID. The standard waiting time is reduced to 10 days. Further, after the annex is finally built, Mr Jim needs to pay for a building inspector to check the compliance with the rules. This is no longer needed	<u>General indicators</u> • Changes in demanded costs such as information costs, planning costs, compliance costs (including administrative burdens, start-up costs and operational costs), delay costs, enforcement costs, etc. <u>Examples of Case-Specific indicators</u> • Time required to comply with information requests

	• Will the regulation impose additional adjustments, compliance or transaction costs on business? • What are the simplification measures adopted for enterprises and SMEs? • What is the change in costs demanded such as information costs, planning costs, compliance costs (including administrative burdens, start-up costs and operational costs), delay costs, enforcement costs, etc.?	since Mr Jim can fill in his construction work on his personal page on the website of the government to declare compliance with the rules, resulting in less enforcement costs faced by Mr Jim. Additionally Mr Jim saves time because he no longer has to fill in all the permit forms and deliver them to the municipality. He can now fill in one online form and thus saves time. This time saving is a reduction of the administrative costs Mr Jim faces.	• Time required to comply with inspections
3.1.3 Financial Costs	• Does the regulation have a significant impact on the financial costs the companies face? Who are the main actors affected? • What is the current level of financial costs the relevant companies face? How does this compare to the rest of the world? • What is the impact the regulation has on the free movement of capital? • What is the magnitude of impact the regulation has on the financial costs the companies face? • What is the change in the financial costs the companies will face as a result of the regulation?	Ms Ann wants to open up a new B&B in the countryside, in a beautiful mountainside rural area. Being a widow with little revenues she doesn't have all the necessary means to fulfil her lifetime dream, but her ambition convinces her to take a loan out of the bank, being sure she will create enough revenues to pay it off. A new partnership program has been adopted by the government of her country that guarantees aspiring business owners who want to increase tourism in rural segregated areas have easy access to financing for their business without any pay-back. Ms Ann's opens her new B&B and attracts over 50 tourists per week in the area. Not only has Ms Ann a significant increase in the revenue, but also the other local merchants and the overall economy of the region. Direct benefits stemmed from this regulation are the increased number of enterprises that start with all the associated revenues. Indirect ones are constituted by the spill-over effect of this regulation – increased revenues from tourism,	General indicators • Financing mobilised and number of firms benefitting from debt financing by source Examples of Case-Specific indicators • Number of new enterprises that make use of aid for opening a business that triggers a growth in tourism in rural areas • Revenues as a result of opening such businesses

	• Does the regulation impact access to finance? • Does the regulation impact on the investment cycle of the companies?	increased benefits for local merchants and attractiveness for investors.	

3.2 INNOVATION AND RESEARCH			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
	• Does the regulation have significant consequences on the level of innovation and research opportunities and practices for the companies? • What is the current status of innovation and research in the companies affected? • What is the magnitude of impact the regulation will have on companies' innovation and research? • Have new or less costly methods, technologies, and/or innovative techniques emerged since this regulation was finalised that would allow regulated entities to achieve the intended results more effectively and/or efficiently? • Does the regulation facilitate the introduction and dissemination of	A new regulation lifts a ban on the use of hazardous materials in country X. A small university in country X pursues experiments in the field of physics that could earn them a world-wide award for their efforts. The new regulation allows them to conduct news research and to bring new products to the market. The new products generate market revenue and welfare for consumers (see consumer effects) as well as employment.	<u>General indicators</u> • Number of economic entities performing modernisation projects per specific sector • Sales of new to market commodities and services • Share of early stage venture capital (% of GDP) • Number of patents and new patents in the market • General expenditure on R&D in the relevant market • Increase in expenditure on R&D in the relevant market

	new production methods, technologies and commodities/services? • Does the regulation promote greater productivity/resource efficiency?		Examples of Case-Specific indicators • Number of foregone innovation opportunities • Loss of capital due to the regulation

3.3 MICRO SMEs AND SMEs			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
	• Does the regulation have significant consequences on micro SMEs and SMEs? Who are the main actors affected? • What is the level of magnitude the regulation has on micro SMEs and SMEs? • What is the impact of identified additional costs and burdens on the operation and competitiveness of SMEs and micro SMEs in particular? • What is the increase in the number of exporting and importing SMEs since the regulation has been implemented? • How has the SMEs debt funding/share of market funding has changed?	In country A there are approximately 1.1M SMEs, of which 50% have less than 10 employees. The old regulation that required all companies (regardless their type or size) to fill in their annual social balance has been changed. The social balance is a document that shows how each of the genders is represented in the personnel of the firm. The policy change acknowledges the useless administrative burden small companies would face in filling in such documents. For instance companies with only two employees were also required to fill in the social balance. Under the new regulation the requirement changes, exempting companies with less than 10 employees from filling in annual social balances. The regulation impacts approximately 550.000 firms (50% of 1,1 million) resulting in financial gains of $2M per year thanks to time saved that would otherwise be spent on drafting the social balance.	General indicators • Number of exporting and importing SMEs compared to the baseline • Diversification of the SMEs debt funding/ share of market funding in total outstanding debt • Financing mobilised and number of firms benefitting from debt financing • SMEs receiving business and innovation support services to increase their competitiveness • Number of simplification measures adopted for enterprises and SMEs

	• What is the number of SMEs receiving business and innovation support services to increase their competitiveness and in which sectors? • Will the market share of SMEs decrease as a result of the regulation? • Are SMEs proportionally impacted more than non SMEs? • Of all the indicators considered, are there any that could apply to the case of Micro SMEs and SMEs? How would they apply and what would the impact be?		• Changes in the proportion of exporting SMEs • Changes in unnecessary administrative and regulatory burdens on both new and existing SMEs • Changes in SMEs growth (number of employees) <u>Examples of Case-Specific indicators</u> • Any other indicators specified before that could apply in the case of SMEs

4. INSTITUTIONS			
4.1 INSTITUTIONS	**GUIDING QUESTIONS**	**QUALITATIVE DESCRIPTIONS**	**INDICATORS**
	• Does the regulation have significant impacts on the domestic institutions? Who are the main actors affected? • What is the magnitude of impact the regulation will have on the domestic institutions? • To what extent does the regulation impact on operating, regulatory and financial costs that the institution faces and what is the rate of increase/decrease? • To what extent does the regulation impose information, administrative, operational and enforcement costs on the government? • By how much have the costs of coordinating within the government and of implementing this regulation increased, including administrative burdens?	The government of country X has hired for the past 10 years private inspectors to address companies' compliance with mandatory fire safety measures. The cost for the government of hiring a private sector inspector amounted to 2000 euros per day. The government assumed that the inspector would hand out multiple fines a day, thus covering the cost of his salary by handing out fines. The new policy mandates the creation of an in-government agency that addresses fire safety measures making the employment of private inspectors redundant. The government no longer has to pay the external private sector inspector but now pays the salary of the government employed official which amounts to only 400 euros a day (compared to 2000 euros before). The fines still are a revenue for the government and will not be impacted by the new policy (given that the new inspector is equally harsh in handing out fines).	General indicators • Number of entities affected divided by type • Percentage change in regulatory, operating and financial costs • Administrative burden and costs of regulating with the government • Changes in the regulatory costs including information costs, decision-making costs, drawing-up costs, administrative costs (such as start-up and operation costs), monitoring costs and enforcement costs Examples of Case-Specific indicators • Percentage decrease in financing costs stemming from the creation of a new agency • Change in monitoring and enforcement costs • Change in administrative burden as a result from the switch

5. MACROECONOMIC ENVIRONMENT			
5.1 EMPLOYMENT	**GUIDING QUESTIONS**	**QUALITATIVE DESCRIPTION**	**INDICATORS**
	• Does the regulation have significant impacts on the overall employment? • What is the current level of employment? • What is the magnitude of impact the regulation will have on employment? • Will the regulation result in an upward or downward change in overall employment? • Did the employment rate increase as a result of this regulation? • In which sectors did the employment rate increase as a result of this regulation? • By how much (%) did the employment rate increase a result of this regulation? • What are the main categories of beneficiaries from the increase in employment?	A highly unpopular and controversial policy has been adopted by the government of country E that decreases the unemployment benefit to 40% of the last monthly salary (compared to 60% before the policy change). Many unemployed adults complain that the new regulation is not at all sufficient to cover living expenses. Therefore, they increase their efforts to find a job. Jobs that were rarely filled before the adoption of the policy are now no longer vacant and the whole labor market sees an increase of 10% in the available work force. This resulted in an increased rate of employment with 1.1% over the last 2 years. The policy measure has a positive impact on the government expenditures on unemployment benefits, a positive impact on employment but a negative impact on poverty and welfare of the unemployed.	General indicators • Dispersion of labour productivity per person • Employment opportunities created • Rate of employment Examples of Case-Specific indicators • Decrease in unemployment rate • Increase in employment rate • Number of people switching from unemployed to employed status

5.2 INVESTMENT			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
	• Does the regulation have a significant impact on the overall level of investment? If yes, who are the main actors affected? • What is the current level of investment and how is it distributed? • What is the magnitude of impact the regulation will have on the overall level of investment? • What are the main changes that the regulation has brought to the investment opportunities? • How does the regulation contribute to improving the conditions for investment and the proper functioning of markets? • Does the regulation impact the volume of Net International Investment Positions (NIIP)?	Ms Ann wants to open up a new B&B in the countryside, in a beautiful mountainside rural area. Being a widow with little revenues she doesn't have all the necessary means to fulfil her lifetime dream, but her ambition convinces her to take a loan out of the bank, being sure she will create enough revenues to pay it off. A new partnership program has been adopted by the government of her country that allows all aspiring business owners that have an idea that could increase tourism in rural segregated areas have access to financing for their business without any pay-back. Ms Ann's opens her new B&B and attracts over 50 tourists per week in the area. Not only has Ms Ann a significant in the revenue, but so to the other local merchants and the overall economy of the region.	General indicators • Country shares in imports of partner countries with which a trade agreement is in force • Country specific NIIP in % of GDP compared to the baseline • Concentration of Foreign Direct investment relative to GDP • Foreign investment attraction Examples of Case-Specific indicators • Volume of foreign investment in the rural area • Volume of domestic investment in rural projects

5.3 ECONOMIC GROWTH			
	GUIDING QUESTIONS	**QUALITATIVE DESCRIPTION**	**INDICATORS**
	• Does the regulation have a significant impact on the economic growth of the country? • What is the current rate of economic growth? • What is the magnitude of impact the regulation will have on the economic growth of the country? • What are the main changes the regulation has on the economic growth of the country? • Will the regulation give rise to trade, customs or other non-trade barriers? How? • What are the changes noted in the GDP and GNP? • Are there changes in net worth due to savings and capital transfers? • How does the regulation change the balance of trade/money supply/employment statistics etc?	The government wants to implement a new program on cutting red tape with 30% for businesses. The direct effect of this program will be reduced administrative costs, however, indirectly this program could have a significant impact on economic growth. Literature shows that reducing for costs for businesses significantly could have a positive impact on future growth. Very few policies will have a significant impact on growth. Only policies that fundamentally impact the costs of businesses, the quality of institutions, or the level of government spending/revenues are likely to affect economic growth.	General indicators • Changes in SMEs growth • New capital raised as % of GDP • Changes in net worth due to savings and capital transfers • GNP • Consumer Price Index • Consumer Confidence Survey • Current Employment statistics • Money Supply • Balance of trade Examples of Case-Specific indicators • New capital raised as % of GDP resulting from the Directive? • What is the volume of cross-border capital flow? • What sit ha change in GNP resulting from the Directive?

4. Quantification/monetisation of the economic benefits

After having identified the actors impacted by the policy option addressing the policy objective (Step 1), having identified the impacts for all actors involved and having categorised these impacts (Step 2), the guide presented numerous examples on how to properly provide a qualitative description of the selected economic benefits (Step 3). The fourth step will show how economic benefits can be monetised. When this process has been carried out for all policy options, the final step requires a comparison of net benefits to find the most efficient policy option.

While the Standard Cost Model (SCM) is used to monetise the administrative cost of meeting regulatory obligations for citizens, companies and public authorities, Activity-Based Costing (ABC) is used to allocate direct and indirect costs to business processes of interest. Both methods can be applied to quantify economic benefits. As the SCM has internationally acquainted basic principles, an internationally accepted structure and is very user friendly, the monetisation of the benefits of government intervention in this guide will be presented by means of an SCM. The logic of ABC is completely identical to the SCM. In order to monetise the benefits with the Standard Cost Model (SCM), the following parameters should be known:

- The quantity: the number of actors involved in the procedure or administrative action;
- The hourly rate: the cost of one hour of work of the person in charge of the (administrative) action;
- The time use: the time it takes to complete an (administrative) action;
- The out-of-pocket cost: the cost that is incurred to complete the (administrative) action. Out-of-pocket costs usually relate to the capital costs introduced under Step 2 'Identification of impacts'.

Let us illustrate this with an example. Suppose that the government of a fictional country with 6 million inhabitants would simplify the procedure to obtain a birth certificate. In the old (current) scenario, citizens have to visit the town hall of their municipality or city to obtain the certificate. In the new scenario, citizens will be able to download the certificate of an online platform especially created, called eCertificate. The required parameters to calculate the benefit of this simplification in monetary terms are:

- Quantity: the number of people requesting a birth certificate on a yearly basis, which is 175.000 citizens;
- Hourly rate: the hourly rate of the civil servant of the municipality or city (which is 38,09 euros), and the opportunity cost of the citizen requesting their birth certificate (which is 24,23 euros);
- Time use:
    - Scenario Old: The time it took to visit the town hall of the municipality or city (which is 36 minutes, of which 20 minutes for transportation back and forth, 6 minutes waiting time, and 10 minutes processing time);

    - Scenario Old: The time it took the civil servant to process the request for a birth certificate (which is 10 minutes);
    - Scenario New: The time it takes to browse to (1 minute) and log on to eCertificate (1 minute), the time it takes to download the birth certificate on eCertificate (1 minute), and the time it takes to print the birth certificate (2 minutes);
- Out-of-pocket cost:
    - The out-of-pocket cost for the movement with a car to the town hall for a citizen, which is 1,99 euros (back and forth);
    - The out-of-pocket cost to print the birth certificate in black ink on an A4 sheet of paper, which is 0,11 euros (both for the town hall in the old scenario and for the citizen in the new scenario).

The specific values of these parameters were obtained by:

- Retrieving statistics from the national register (quantity parameter);
- Retrieving income data from the national bank and national office for economy of the fictional country (hourly rate of civil servants);
- Dividing the general domestic product at nominal prices of the country by the total number of hours worked by all people belonging to the country's labour force (opportunity cost of citizens);
- Conducting time measurements at a selected number of municipalities and cities (time parameters for Scenario Old);
- Conducting time measurements while actually requesting a birth certificate on the eCertificate platform (time parameters for Scenario New);
- Building a transportation calculator to determine the time use and out-of-pocket cost for the movement to the town hall, based on the total number of town halls in the fictional country;
- Surveying the out-of-pocket cost for printing a black and white A4 sheet of paper at a selected number of public libraries.

On the next page, the above-mentioned parameters are used in a Standard Cost Model (SCM) to measure the benefit of this fictional government intervention. In this case, the government gives rise to a benefit of 3.650.004 euros thanks to the easier procedure to request a birth certificate. Mostly benefited by this government intervention are the citizens, with a benefit of 2.519.796 euros, while civil servants and more broadly local authorities experience an economic benefit of 1.130.208 euros.

We advise you to read Better Regulation Toolbox #60 of the European Commission for more information on the Standard Cost Model.

Figure 2 Standard Cost Model approach to measure the benefit of government intervention

Example of a procedure to request a birth certificate

Nr.		Description process	Number (Q)	Freq	%	Profile	Hourly rate (euro)	Time spent (min)	Out-of-pocket costs (euro)	Compliance costs T x P	Compliance costs Q	Compliance costs AB
Scenario Old: Obtaining a birth certificate at the town hall												
	A1	Citizen: Driving to town hall (back and forth)	175.000	1	100,00%	Citizen	24,23	20,00	1,99	10,07	175.000	1.761.667
	A2	Citizen: Waiting in line to be served	175.000	1	100,00%	Citizen	24,23	6,00	0,00	2,42	175.000	424.025
	A3	Citizen: Going through the process of obtaining the certificate	175.000	1	100,00%	Citizen	24,23	10,00	0,00	4,04	175.000	706.708
	A4	Civil servant: Processing the request of a birth certificate	175.000	1	100,00%	Civil servant	38,09	10,00	0,11	6,46	175.000	1.130.208
										Compliance cost		**4.022.608**
Scenario New: Obtaining a birth certificate via eCertificate												
	B1	Citizen: Browsing to the online platform eCertificate	175.000	1	100,00%	Citizen	24,23	1,00	0,00	0,40	175.000	70.671
	B2	Citizen: Logging on to eCertificate with an eID-card	175.000	1	100,00%	Citizen	24,23	1,00	0,00	0,40	175.000	70.671
	B3	Citizen: Downloading the birth certificate on eCertificate	175.000	1	100,00%	Citizen	24,23	1,00	0,00	0,40	175.000	70.671
	B4	Citizen: Printing the birth certificate	175.000	1	100,00%	Citizen	24,23	2,00	0,11	0,92	175.000	160.592
										Compliance cost		**372.604**
										Impact 1-2		**-3.650.004**

5. Comparison of the net benefits

STEP 5: COMPARISON OF THE NET BENEFITS		
☐	I.	Determine which policy option has the largest net benefit.

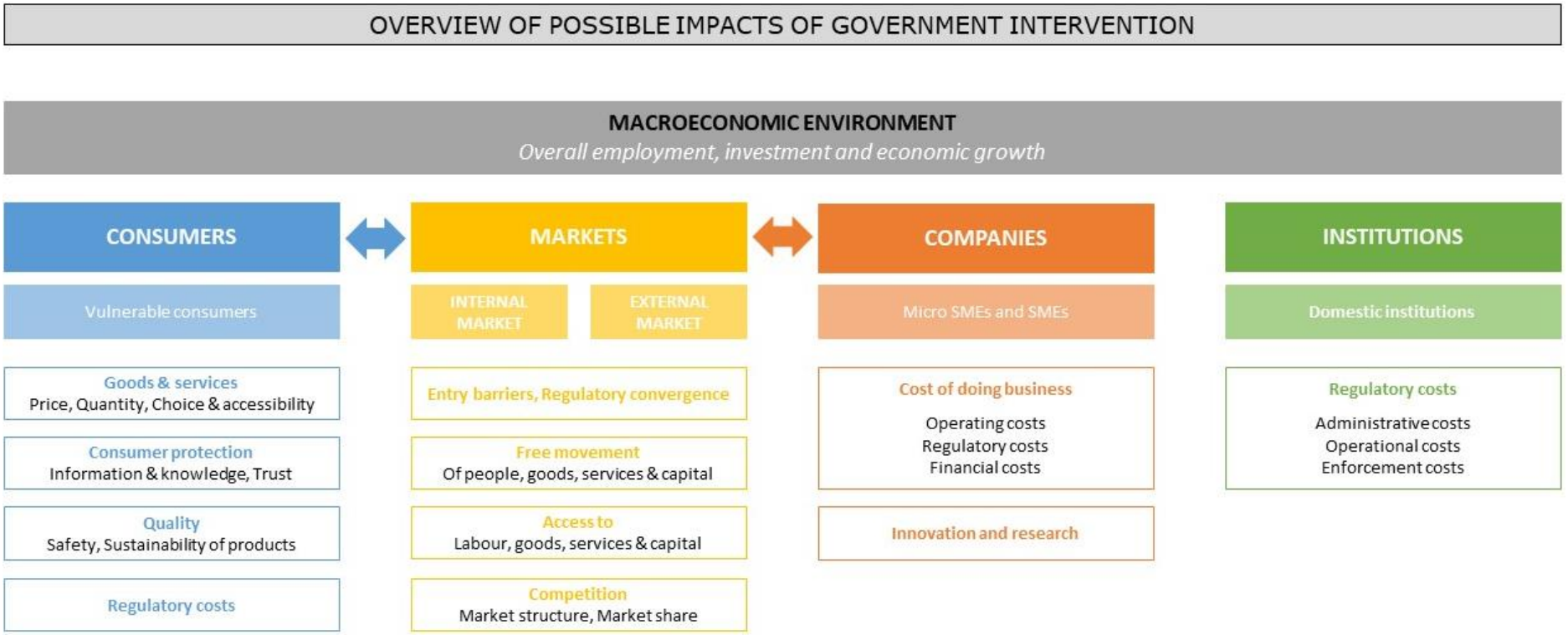
Coming back to the eCertificate example. With the introduction of the above discussed online platform eCertificate, the government would give rise to a benefit of 3.650.004 euros. Suppose that a second policy option, next to the online platform, entails the possibility for recipients of birth certificate to gain access to the national register containing birth information of all citizens. Also suppose that the identification and quantification exercise for this policy option finds a benefit of 3.752.120 euros. The higher benefit is due to avoided communication between a citizen and the recipient of a birth certificate (because the recipient can request the certificate himself).

It would then be necessary to look into the costs of each policy option. Presume a development and testing cost of 1.000.000 euros for the eCertificate platform, and a development and testing cost of 1.250.000 euros for the access points to the national register. The higher cost to provide access points to the national register largely due to higher costs of security protocols.

Having completely identified all costs and benefits linked to both policy options, the drafters of this RIA would conclude that the eCertificate platform is the most efficient policy option. The eCertificate option would lead to a net benefit of 2.650.004 euros while the online platform would result in a net benefit of 2.502.120 euros. The eCertificate achieves the policy objective at the largest net benefit.

Below, in Figure 3, the possible impacts of government intervention on consumers, companies, markets and institutions are shown. In Part III the framework is applied to a case study.

Figure 3: Overview of possible impacts of government intervention



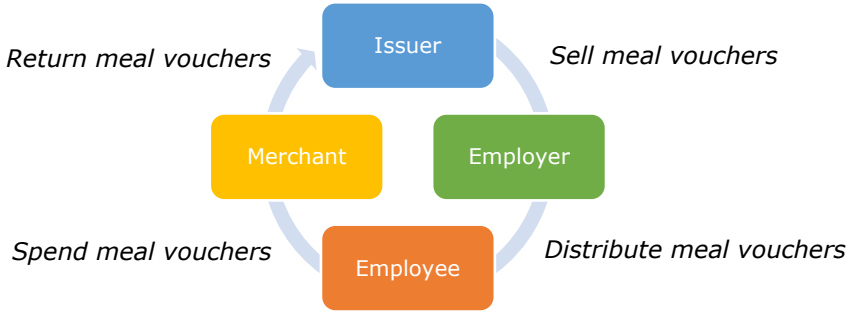
PART III Case study: Electronic meal vouchers in Belgium

1. Introduction

In Belgium, employers can give their employees a social benefit called meal vouchers (see picture). Meal vouchers are a popular alternative to pay raises as they accommodate advantages for both employers and employees. Employers are exempted from social security contributions on the meal vouchers they give their employees. Furthermore, the employer can deduct a certain amount of money per meal voucher from his corporate tax declaration. Employees enjoy an increase in their purchasing power, as receiving a meal voucher worth for example 8,00 euros only costs them 1,09 euros in foregone wage. Employees are also exempted from social security contributions on meal vouchers, and do not have to pay taxes on this social benefit. Meal vouchers can be used to pay for food in supermarkets, butchers, bakeries etc. (market for food) and to pay for meals in restaurants, diner's, eateries etc. (market for food service) on Belgian territory.

These paper meal vouchers can be seen as checks or cash banknotes. A loaf of bread of 2,20 euros could be paid with a meal voucher of for instance 7,00 euros, for which the consumer would receive change. The merchant who received a payment with paper meal vouchers had to send the meal vouchers to the involved issuing company to be reimbursed in euros by the issuer. The flow of meal vouchers is presented in Figure 4.

Figure 4: Schematic overview of paper meal vouchers process



In order to reduce the administrative burdens related to these paper meal vouchers, the Belgian federal government in 2011 introduced electronic meal vouchers. This switch from paper to electronic meal vouchers created a significant economic benefit for employees, employers, food and food service companies and the issuers of meal vouchers (mostly related to avoided administrative costs). In the framework below, the benefits are discussed in more detail.

With electronic meal vouchers, the value of the vouchers is deposed monthly on an account that is linked to an electronic meal voucher card (which is a smartcard). Meal vouchers are valid for one year. Employers pay a percentage of the value of the meal vouchers as a compensation for the services. The merchants in the food and food service market who receive payments in meal vouchers pay a transaction cost to compensate the issuers of meal vouchers.

Issuers of meal vouchers (paper and electronic) have to be certified by the Belgian federal government. In the scenario of the paper meal vouchers, only Sodexo and Edenred were allowed to issue meal vouchers. In 2011, with the introduction of electronic meal vouchers, the Belgian government certified two more issuers, Monizze and E-VE (E-kena), in order to increase competition on the market of meal vouchers.

The Belgian federal government decided to terminate paper meal vouchers as of 1 January 2016, in favour of the electronic meal vouchers. In this third part of the guide, we will apply the meal voucher reform case to the framework presented in the previous part to illustrate the identification, description and quantification of the impacts of a policy option (in this case the complete replacement of paper meal vouchers by electronic meal vouchers).

2. Applying our framework to the case study of electronic meal vouchers

STEP 1: IDENTIFICATION OF ACTORS		
		Consider which of the four actors are impacted by the proposed policy option.
☐	I.	The substitution of paper meal vouchers by electronic meal vouchers, is likely to impact consumers, markets, companies and institutions. **Consumers** will benefit from the ease of use of an electronic carrier. The burden of processing meal vouchers will decrease considerably for **companies**. An increase in the ease of use of meal vouchers will probably impact the entire food and food service **markets** in a positive way. The **federal state** benefits from the substitution because of the lesser fraud sensitivity of electronic meal vouchers.
		For each actor that is impacted, describe which specific groups are impacted.
☐	II.	The specific groups of **consumers** concerned by the substitution of paper meal vouchers are: a) The direct consumers, being the employers granting the social benefit of meal vouchers to their employees (about 75.000); b) The end consumers, being the people working in employment and receiving the social benefit of meal vouchers from their employer (about 2.000.000). The specific groups of **companies** impacted are: a) The supermarkets, groceries, butchers, bakeries, fruit and vegetable shops, cafes, bars, restaurants and other merchants accepting payments with meal vouchers (about 40.000); b) The issuers of meal vouchers (only 2: Sodexo and Edenred). The specific groups of **markets** impacted are the food and food service industries. The specific type of **institution** impacted is the federal treasury.
		For each group that is impacted, describe how this group is impacted by the proposed policy option.
☐	III.	The impacts of the substitution of paper meal vouchers by electronic meal vouchers for **employers** (direct consumers) are: 1) A responsible of the employing company is not involved anymore in accepting the meal vouchers from the issuer as well as in handing over the meal vouchers to the employee. This also causes the administrative burden for accepting and handing over meal vouchers to disappear. 2) Payment of a commission to the issuing company of choice to compensate for the electronic system. The impacts of the substitution of paper meal vouchers by electronic meal vouchers for **employees** (end consumers) are: 1) Smaller risk of loss of meal vouchers. 2) Smaller risk of theft of meal vouchers because the smartcard can be blocked whenever theft is reported. 3) With the smartcard, the oldest meal vouchers will always be charged first. The risk of expired meal vouchers therefore drops. 4) When new meal vouchers are released, they are immediately available. The paper meal vouchers first have to be sent to the employer, and the employer then has to hand them over to the employee. 5) No need to pick up the paper meal vouchers and sign for receipt. 6) Less acceptance points for the electronic meal vouchers because merchants have to be equipped with an electronic payment terminal. 7) Transfer of meal vouchers to family and friends is more difficult because the smartcard is secured with a code. The impacts of the substitution of paper meal vouchers by electronic meal vouchers for **food and food service merchants** are:

		1) Processing time at the cash register is likely to decrease because cashiers don't have to count the paper meal vouchers anymore, and they don't have to check the validity of the paper meal vouchers anymore. 2) Significant decline in the administrative burden for merchants to process the meal vouchers, as well as no need to send back the paper meal vouchers to the issuers anymore. 3) Safer payment (smartcard vs. paper meal vouchers). 4) Faster reimbursement by the issuing company (within 48 hours). 5) Payment of a transaction cost and/or one-off start-up cost to the issuer to receive payments with electronic meal vouchers. 6) Potential increase in business costs (software update for cash register, terminal for electronic payments etc.). The impacts of the substitution of paper meal vouchers by electronic meal vouchers for the **issuers** are: 1) Commissions paid by the employers granting electronic meal vouchers. 2) Transaction fee and/or one-off start-up fee paid by the merchants accepting electronic meal vouchers. 3) Investments in software and infrastructure. 4) Revenue loss of expired, lost and stolen paper meal vouchers. Expired, lost and stolen paper meal vouchers were paid for by the employer, but were obviously never used to buy food or meals. Because of this, the issuers did not have to reimburse merchants and thus made a profit out of expired, lost and stolen paper meal vouchers. The impact of the substitution of paper meal vouchers by electronic meal vouchers for the food and food service **markets** is an increased attractiveness thanks to the ease of use of electronic meal vouchers. The impact may however be greater for the food service market (cafes, bars and restaurants) because these merchants sell a more luxury product. The impact of the substitution of paper meal vouchers by electronic meal vouchers for the **institutions** is that the federal treasury faces a less fraud sensitive system (electronic circuit vs. paper circuit).

STEP 2: IDENTIFICATION OF IMPACTS		
		Identify all costs and benefits stemming from the proposed policy option.
☐	I.	The costs and benefits of a substitution of the paper meal vouchers by electronic meal vouchers for **employers** are: 1) Cost of paying a commission to the issuing company; 2) Benefit of reduced administrative burden. The costs and benefits of a substitution of the paper meal vouchers by electronic meal vouchers for **employees** are: 1) Cost of less acceptance points for electronic meal vouchers; 2) Cost of the difficulty to transfer electronic meal vouchers to family and friends; 3) Benefit of a decrease in loss of meal vouchers; 4) Benefit of a decrease in theft of meal vouchers; 5) Benefit of a decrease in expiration of meal vouchers; 6) Benefit of an immediate availability after grant date; 7) Benefit of no need to pick up the vouchers and sign for receipt. The costs and benefits of a substitution of the paper meal vouchers by electronic meal vouchers for **food and food service merchants** are: 1) Cost per transaction and/or one-off start-up cost for receiving payments with electronic meal vouchers, payable to the issuer; 2) Cost of being technically ready to accept electronic meal vouchers; 3) Benefit of gain in time per customer at cash register; 4) Benefit of reduced administrative burden; 5) Benefit of safer payments; 6) Benefit of faster reimbursements by the issuing company. The costs and benefits of a substitution of the paper meal vouchers by electronic meal vouchers for **issuers of meal vouchers** are: 1) Cost of investing in software and infrastructure; 2) Cost of revenue loss of expired paper meal vouchers; 3) Benefit of receiving commissions paid by the employers (direct customers); 4) Benefit of receiving a transaction fee and/or one-off start-up fee paid by the merchants. The benefit of a substitution of the paper meal vouchers by electronic meal vouchers for the **food and food service markets** is an increased attractiveness. The benefit of a substitution of the paper meal vouchers by electronic meal vouchers for the **federal treasury** is a decrease in fraud with meal vouchers. Note that the benefits for the issuers of meal vouchers, the commission paid by the employers and the start-up fee paid by the merchants, are an exchange of costs incurred by other parties. The impacts on both sides have to be included in the assessment.
☐	II.	Consider proportionality regarding the identified benefits.
☐	III.	Differentiate between economic and non-economic benefits, and select only economic benefits.
☐	IV.	For each economic benefit, differentiate between tangible and intangible benefits, and select only tangible economic benefits.
☐	V.	For each economic benefit, differentiate between direct and indirect benefits.
☐	VI.	For each economic benefit, differentiate between one-off and recurrent benefits, and determine duration of recurrent economic benefits.

Impact	Cost vs. benefit	Proportional	Economic vs. non-economic	Tangible vs. intangible	Direct vs. indirect	One-off vs. recurrent
Employer: Administrative burden	B	Yes	Economic	Tangible	Direct	Recurrent
Employee: Loss of meal vouchers	B	Yes	Economic	Tangible	Direct	Recurrent
Employee: Theft of meal vouchers	B	Yes	Economic	Tangible	Direct	Recurrent
Employee: Expiration of meal vouchers	B	Yes	Economic	Tangible	Direct	Recurrent
Employee: Immediate availability	B	Yes	Economic	Intangible	Direct	Recurrent
Employee: No picking up and signing	B	Yes	Economic	Tangible	Direct	Recurrent
Merchant: Time at cash register	B	Yes	Economic	Tangible	Direct	Recurrent
Merchant: Administrative burden	B	Yes	Economic	Tangible	Direct	Recurrent
Merchant: Safer payments	B	Yes	Economic	Intangible	Direct	Recurrent
Merchant: Faster reimbursement	B	Yes	Economic	Intangible	Direct	Recurrent
Issuer: Commission/transaction fee	B	Yes	Economic	Tangible	Direct	Recurrent
Issuer: Start-up fee	B	Yes	Economic	Tangible	Direct	One-off
Market: Increased attractiveness	B	Yes	Economic	Intangible	Direct	Recurrent
Federal treasury: Less fraud	B	Yes	Economic	Intangible	Direct	Recurrent

STEP 3: QUALITATIVE DESCRIPTION OF BENEFITS		
☐	I.	For each indicator, describe the current value.
☐	II.	For each indicator, describe what the expected value will be after the government intervention.

For **employers** (direct customers):
After the adoption of electronic meal vouchers, the increase in their popularity led to a decrease of 10% in price which can be considered as the most significant benefit for the employers, resulting in consistent savings on the purchasing of large numbers of meal vouchers. The fall in price resulted in more interest from other employers, giving a rise in demand and thus in the quantity of used meal vouchers. In the first three years after the adoption, the number of employers that used electronic meal vouchers increased from 10,88% to 61,12%. The number of companies with more than 50 employees that used the meal vouchers doubled and the number of companies with less than 50 employees that offered the electronic meal cheques tripled. After meeting so much popularity, two new voucher producers came to the market, offering more choice to the employing companies to choose their issuers from.

For **employees** (end customers):
For the employees the main benefit was the increase in the quantity (the actual value the meal vouchers accounted for) accrued through less loss of value due to expiration, loss or theft. Another benefit is from less administrative burden for picking up the paper meal vouchers and signing for receipt. Besides this, the users meet a cost from the loss of information over the value of their meal cheques. If before it was easy to just count the meal vouchers left, now the current sold needs to be checked online for each electronic card.

For **merchants**:
Making the switch from paper vouchers to the electronic ones meant that a great deal of the administrative burdens was eliminated. A small number of merchants that do not yet own a cash register machine and software that makes available the payment with electronic cards will need to install them. Considering that there are relatively few merchants that do not own these and that eventually they are also necessary for any kind of electronic payment, it is not considered a significant impact.

For the **issuers**:
As all the operations are now done electronically, there is no more need to process all paper vouchers that need to be cashed in, to deliver them or to produce them. The time saved this way is a significant benefit from the point of view of the issuers through having less administrative burdens. There are also costs supported by the issuers by making this transition. A relevant one would be the one-time cost of the installation of necessary software and hardware to process the transactions. A second one is the loss of revenue resulted from less paper vouchers lost that are not eventually cashed in. In the paper scenario, many vouchers expired or got lost or stolen, ending up not being used. These were vouchers already sold by the issuer, but for which the issuer did not have to reimburse a merchant.

For the food and food service **markets**:
At market level, there are currently entry barriers that need to be passed in order to become an issuer of electronic meal vouchers according to Art. 19 of the Royal Decree adopted on 28 November 1969. This impairs the easy entrance to the market of just any issuer of electronic meal vouchers. A significant impact can be noticed on the market structure and the market share. The entrance of 2 new issuers of electronic meal vouchers translated into a shift from the duopoly that existed until 2016. While the two main issuers still own around 90% of the market share, the shift shows a movement into the right direction. However, the market is still oligopolistic and could benefit from more competition.

STEP 4: QUANTIFICATION/MONETISATION OF BENEFITS
If we were to focus in our assessment only on the avoided administrative burdens thanks to the switch to electronic meal vouchers. With the help of the Standard Cost Model, we quantified the following avoided administrative burdens: For the **employers**: Switching from 100% paper meal vouchers to 100% electronic meal vouchers leads to a reduction in the administrative burden of about 672,83 euros per employer for the time spent processing and handing over meal vouchers to employees. The total decrease in administrative burden equals 50.462.389 euros per year. For the **employees**: Because employees (end customers of meal vouchers) do not have to pick up their paper vouchers any longer, and because they don't have to sign for receipt anymore, a substitution of the paper meal vouchers by the electronic meal vouchers leads to a reduction in the administrative burden for employees of 6,86 euros per employee. This resulted in a total decrease of the administrative burden of 13.724.151 euros per year. For the **merchants**: The disappearance of the need to sort and process, and send the paper meal vouchers back to the issuer causes an administrative burden decrease of 7.508,96 euros per merchant or 67.580.668 euros in total per year.

STEP 5: COMPARISON OF NET BENEFITS		
☐	I.	Determine which policy option has the largest net benefit.
Referring to the process during which the functioning of the meal vouchers was reviewed in 2015/2016, this case showed that the option with the largest net benefit is not always the most politically desirable option. Besides the policy option to replace paper meal vouchers completely by electronic meal vouchers, another policy option was explored as well. This alternative option to replace the paper meal vouchers was a cash bonus free from social security contributions. As the RIA found that the most efficient option was to grant employees a cash bonus free from social security contributions (net benefit of 150.744.399 euros), the government instead preferred to switch from paper to electronic meal vouchers (net benefit of only 107.077.855 euros) because the bonus-option was not supported by all stakeholders involved in the policy review. This is again a reminder that policy makers can calculate the net benefits of all the options, but the analysis cannot replace the decision making process by policy makers.		

3. Conclusion

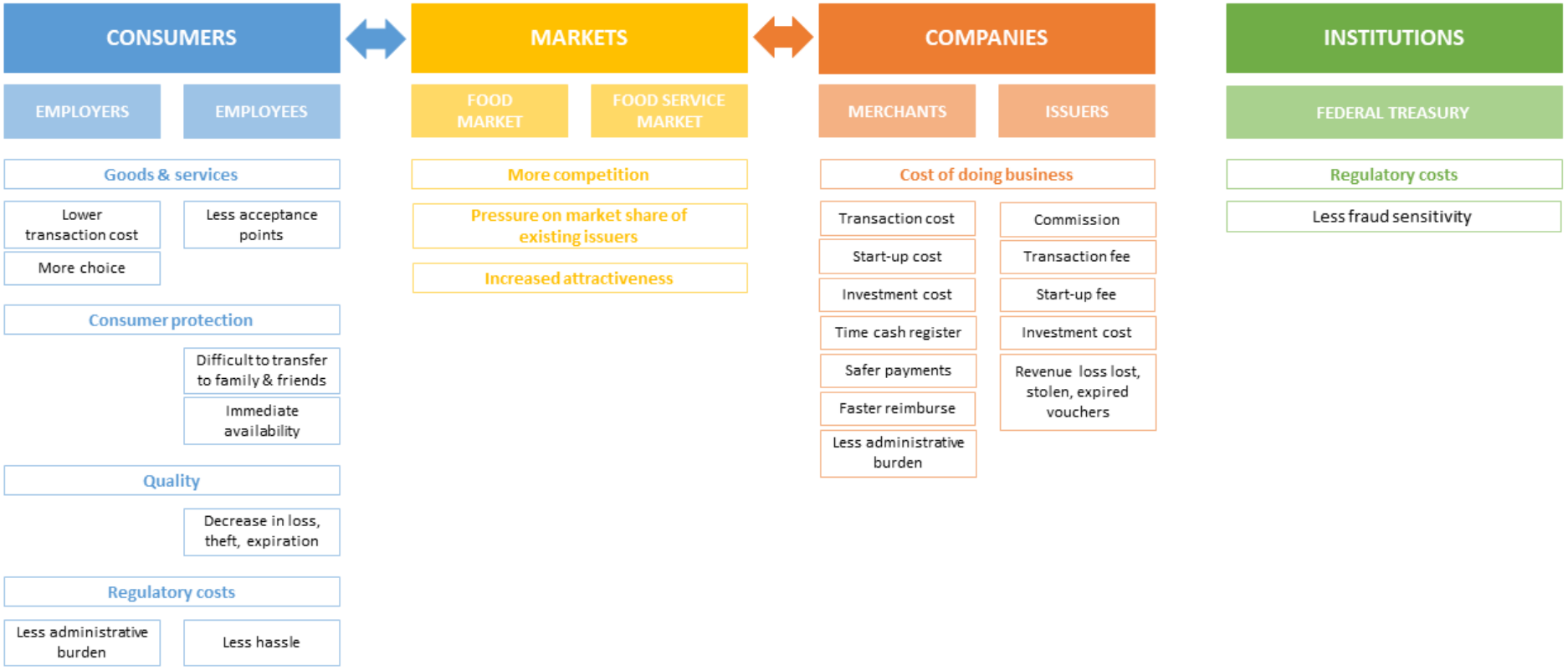
To policy makers who are taking their first steps in conducting RIAs, the Belgian meal voucher case can provide comprehensible insights in how to identify and describe policy impacts. As laid out in Part II of this guidebook, four possible actors can be impacted by government intervention. A review of the functioning of the paper meal vouchers showed that both consumers, companies, markets and institutions are impacted by the system. This case demonstrates that more than one actor can be involved within a group of actor. Both the employer and the employee are impacted consumers, while the issuers of meal vouchers and merchants accepting payments with meal vouchers are impacted companies.

A change of regulation in a certain policy domain can have multiple impacts – both costs and benefits – on actors. It is important to do extensive desk research and to consult various stakeholders to get a clear sense of all relevant and proportional impacts of a policy option. Notice that in the case of the electronic meal vouchers most benefits were avoided costs (administrative burdens). With the help of the Standard Cost Model (SCM), which is an instrument to monetise the retained impacts of a policy option, we found that a switch to electronic meal vouchers leads to a reduction in administrative burdens of 672,83 euros per employer, 6,86 euros per employee, and 7.508,96 euros per merchant accepting meal vouchers.

Nonetheless, switching from paper meal vouchers to a cash bonus free from social security contributions would incur a larger net benefit of 150.744.399 euros for all stakeholders (instead of 107.077.855 euros). Due to lobbying by certain stakeholders, the Belgian federal government however decided not to pursue the cash bonus, and announced that the paper meal vouchers would be replaced completely by electronic meal vouchers.

The framework presented in Figure 3 of Part II of this guidebook is applied to the meal voucher case in Figure 5 below. Figure 5 contains all impacts that would arise in the policy option of replacing the paper meal vouchers by electronic meal vouchers.

Figure 5: Overview of impacts of replacing paper meal vouchers by electronic meal vouchers



ANNEX 1: Examples of Good Practice in Regulatory Impact Assessment

1. Regulatory Impact Evaluation Guide, Volume II Case Studies, Cofemer - examples extracted[3]

A. Regulatory Standard for Safety Requirements in Commercial Trampolines (page 5)

Problem – The Australian government is considering whether it is necessary to develop a national regulation concerning the safety of trampolines. Injury data and research shows that children suffer more and more injuries from impacts with hard parts of the trampoline, such as the frame system and the suspension (including steel springs that connect the pad to the frame). Currently, legislative requirements related to domestic trampolines exist, but appear to be insufficient. Although many producers sell safety nets alongside the trampolines, this is not yet an actual requirement in the current legislation. As a consequence, about 3000 children suffer injuries because of trampoline use in three Australian states. The problem is identified as a government failure resulting from the lack of appropriate regulation. The objective of the government is to reduce the number and seriousness of injuries suffered by children, resulting from impacts with the trampolines chassis and suspension systems.

Why is it a useful example?
It implements a cost-benefit analysis method which assesses the costs and benefits of the options and compares them in order to make a decision. When thinking about the injuries children experience one can examine both direct and indirect effects. Direct medical costs following the injuries can be hospital and doctor costs, while indirect costs could be linked to foregone opportunities (e.g. being in a wheelchair after the incident and not being able to walk) or emotional damage. Foregone opportunities and emotional damage can be monetized by using stated preference methods (as discussed above). In this Impact Assessment, the Australian government has combined both direct and indirect monetisation methods. They measured the direct medical costs via the Cost of Illness method, and the indirect effects via the VSL (Value of Statistical Life – an estimate of how much people are willing to pay for their safety) and DALYs (Disability Adjusted Life Years – the value of one lost year of healthy life, calculated as the sum of years of life lost and years lost due to disability). Additionally, the children's injuries have a financial impact on their caregivers (e.g. parents or grandparents) – being considered that they give up paid hours of labor to care for them –, and therefore this should be calculated as a productivity loss. These are assessed using the cost of illness method. These avoided costs which would arise if trampolines are safer, translate into direct quantifiable benefits for consumers.

Based on the *Australian standards of 'the value of life and health for public policy',* the value of a life and health in public policy is estimated to be between $3.3 and $6.6 million per person. The VSL is said to have increased and based on previous research, it is considered that the value society puts on reducing the risk of injuries caused by falls on the trampoline frame is approximately $30 million for one year (this covers the costs of all the injured in one year). The costs at consumer level are considered only to be the potential 15-25% increase in the price of trampolines, but the impact is considered only medium since the products at the higher end of the price spectrum have been found to be more compliant already with the proposed regulation. The savings from reduced medical expenses due to less injuries are an impact on the government (given that they pay the medical costs). These health-related benefits extend also to an overall increased health. Measured through the cost of illness method it has been shown that direct costs of physical inactivity (about 2.4% of total health care costs) could be avoided.

The costs for the government are related to the development, administration and enforcement of a new regulation as well as education campaigns as seen below:

[3] Regulatory Impact Evaluation Guide, Volume II Case Studies, Cofemer, can be accessed at http://www.cofemer.gob.mx/presentaciones/English_Vol%20%202_Case%20Estudies_FINAL.pdf

Activity	Cost (AUD $Nominal)	Cost for a period of 5 years (AUD $Nominal)
Development of safety standards and revision	$70,000	$70,000
Participation in the Australian Standard revision	$10,000	$10,000
Market supervision and surveys (cost per year)	$57,000	$285,000
Provide an educational campaign, including the development and distribution of a guide for the provider and, if necessary, an educational campaign for the provider that could include a seminar (Extended costs for a period of 5 years)		$26,000
Total		*$391,000*

The costs of complying with the regulation are expected to be incurred by suppliers and producers, but they are planned to be partially passed on to the consumers, in terms of increased prices. The competition might also be impacted, through a reduced number of competitors in case some providers decide to leave the market. The producers are expected to also enjoy benefits through increased safety that is expected to result in a higher demand. These prior three effects are not listed in the cost-benefit analysis.

B. Cigarette Ignition Propensity Regulations And Regulations Amending The Tobacco Reporting Regulations (Health Canada) (page 14)

Problem - Smoldering cigarette butts are the main cause of fires in residential areas in Canada. In the period 1995-1999 cigarettes started 14,030 fires in which 356 people died, 1,615 were injured and a property damage in value higher than $200 million was caused. The Department of Health proposes a regulation that requires that cigarettes have a lower probability of ignition. A possible solution has been identified by altering the design characteristics of cigarettes through decreased circumference, tobacco density and/or paper porosity. The problem identified seeks to remedy a government failure that results from the lack of legislation to include design and production measures that reduce the risk of ignition of cigarettes. The objective is to decrease the number of residential fires by reducing the risk of ignition of tobacco products.

Why is it a useful example?
When linking it to the objective, the example identifies the direct benefit of the proposal as the monetised value of the avoided damage effects on health. In the first step, the situation under the status quo is assessed by calculating the number of deaths due to ignition, the number of injured people and the value of the property damage.

Costs were assessed through a cost model developed by the Canadian Department of Health, and by surveys. The model takes into account materials, labour and the manufacturing cost of one pack of cigarettes, before taxes and profits. The survey consisted of a set of questionnaires sent to all known cigarette manufacturers and importers, as well as a sample of other potentially affected parties, including retailers, distributors, producers and unions. The total price of production for a cigarette pack was determined through the model and the survey ($5.70). Through the same model it was determined that the cost of compliance per pack would be $0.126/pack ($26 million per year).

The benefits have been calculated by monetising a life (VSL – Value of Statistical Life - an estimate of how much people are willing to pay for their safety) in order to assign an economic value to the death reduction, reaching a profit of $5.8 million per life saved, and monetising the illness (COI – Cost of Illness, an approach used to reduce the estimated value of the injuries resulting from the regulatory proposal). Another approach includes direct costs such as emergency transportation, care, hospitalization, medication and doctor visits, but does not take the indirect costs into account. The potential benefits are calculated by considering two scenarios – best case and worst case – and the cost of regulatory compliance, as seen in the table below.

Reduction Scenario	Reduced Fatalities	Reduced Injuries	Reduced Property Damage	Total Benefits
Scenario 1	208.8 million	0.2 million	19. 1 million	228.1 million
Scenario 2	104.4 million	0.1 million	9.6 million	114.1 million

In both the best case and the worst-case scenario the benefits exceed the costs of implementing the program.

C. Unified Enterprise Law and Common Investment Law: focus on the replacement of the existing licensing mechanism with a registration system applicable to foreign investors (page 52)

Problem - Enterprises of different ownership and/or nature were treated differently in terms of access to land, credit, trading rights, construction, among others. As a result, the business environment in Vietnam used to be perceived as inconsistent, unfair, unpredictable, unstable and inconsistent with WTO requirements, an organisation with whom Vietnam is engaged in negotiations for its membership. The main objective of the regulation is to guarantee that all businesses and investors are treated equally and fairly in a transparent, stable, and predictable legal environment, as well as to ensure competitiveness within the investment climate and to encourage the development of enterprises. The problem is identified as a market failure due to the entry barriers posed by the complexity associated with the access of foreign invested enterprises (FIEs) to the market and a government failure due to the heterogeneity in regulating enterprises according to their ownership or nature. In order to mitigate this, the government proposes the issuance of two primary laws – the UEL (Emission of Unified Enterprise Law) and the CIL (Common Investment Law) to homogenize the environment and level the field of issuing activity licenses.

Why is this a useful example?
The regulation assessed is a regulation with an impact on the economic, social and administrative environment. It is assessed by performing a cost-benefit analysis and the decision to choose an option was based on the principle of greater benefits compared to costs.

The RIA acknowledges an impact on trust from the very beginning, stating that the business environment in Vietnam used to be perceived as inconsistent, unfair, unpredictable, unstable and inconsistent with WTO requirements.

Even though qualitative costs and benefits are also mentioned, the main focus is on the quantitative ones and on a calculation of the net economic impact of the replacement of the existing investment licensing mechanism with an investment registration system applicable on both national and foreign investors. In order to evaluate the impact of the replacement in the period 2006-2020, a potential scenario has been drawn up and used as the de facto hypothesis.

In order to gather data for the analysis, desk research, expert consultation, business impact test panels, business polls and in-depth interviews with stakeholders have been undertaken.

Furthermore, to be able to compare the status quo with the potential regulation, the costs that foreign investors have to pay are listed for enterprises, which are split in three categories based on their structure. To measure these costs, the Standard Cost Model (SCM) methodology has been used for the following activities:

Cost item	Category 1	Category 2	Category 3
Legal consultancy	6,000	3,000	2,000
Development of feasibility study and application document	10,000	5,000	4,000
Cost related to travelling, accommodation for staff working on the project	40,000	20,000	15,000
Paperwork, preparation of papers certifying legal and financial status	500	500	500
Informal expenses (reception, presentation, etc.)	10,000	5,000	5,000
Total	*66,500*	*33,500*	*26,500*

To evaluate the impact of the new proposed regulation, the same approach has been used for the following costs:

Cost item	Category 1	Category 2	Category 3
Legal consultancy	5,000	2,000	2,000
Development of feasibility study and application document	10,000	10,000	10,000
Cost related to travelling, accommodation for staff working on the project	500	500	500
Paperwork, preparation of papers certifying legal and financial status	2,000	2,000	2,000
Total	*17,500*	*14,500*	*14,500*

As mentioned before, the analysis consists of comparing the costs incurred in the status quo with the costs that would be incurred under a new program in order to see if a new program would benefit the government. The benefit considered in the RIA is the reduction in costs experienced through replacing the status quo with a new program and equals the difference between the costs in the two situations.

Cost item	Category 1	Category 2	Category 3
Benefit (Reduction of costs per year)	*49,000*	*19,000*	*12,000*

Finally, the net benefit of the new program has been calculated as the reduction of costs per year times the number of investment projects.

Project categories	Annual reduction in entry costs		
	2006	2010	2011-2020
Large-scale projects which should have been under the licensing authority of MPI	2,312,163	2,642,472	2,312,163
Projects which should have been under the licensing authority of provincial People's Committees	6,952,860	8,343,432	7,300,503
Projects which should have been under the licensing authority of Management Boards of IZ and EPZ	2,773,440	3,328,128	2,912,112
Total net benefit	*12,038,463*	*14,314,032*	*12,524,778*

It is clear from the tables above that benefits exceed costs. Qualitative benefits for each option have also been listed, but only as informative since these are not taken into consideration in the analysis.

D. Official Mexican Standard PROY-NOM-032-ENER-2013.Maximum consumption limits for equipment and appliances that require standby power. Test methods and labeling (page 77)

Problem – The standby power consumption of appliances and equipment in Mexico exceeds international levels in standby mode. The absence of a standby power maximum consumption standard for electrical appliances, together with the lack of information for consumers regarding consumption cost of appliances in standby mode, does not generate a culture of energy saving with manufacturers and consumers. This leads to a lack of incentive for manufactures of appliances to innovate and develop technologies that reduce energy consumption in standby mode. The objective of the Government is thus to reduce the maximum allowed power consumption in standby mode by reducing 'vampire power consumption' (the energy appliances consume while switched off or in standby mode) and increasing consumer awareness on energy efficiency. The problem is generated by negative externalities caused by possible loss of non-renewable natural resources and an asymmetry of information faced by consumers. The asymmetry of information is generated by the limited information consumers have about the energy consumption behavior of their appliances (i.e. that they consume power even if in standby mode) and the costs associated to such consumption. To mitigate this, a mandatory Official Mexican Standard (NOM) was proposed by the government stipulating the maximum standby power consumption for 14 types of equipment and appliances.

Why is this a useful example?
A cost-benefit analysis was performed to analyze the new standards. When assessing the costs in the status quo, a separate study calculated the future costs for a time horizon of 10 years by taking into account the number of units of equipment and appliances sold, the growth rate of sales numbers,

standby power consumption and the number of hours appliances are in standby mode. In the table below, the number in the last column is expressed in millions of pesos (mp). The calculations show that users are expected to pay up to 38,201 mp during the period 2012-2021.

To calculate the costs after implementing the standards, the same approach was used, but applied to different assumptions (a sensitivity analysis), e.g. adapted to the consumer prices under the new standards, leading to the results shown in the table below. The calculations take into account the quantity sold, the price of energy, the number of hours of standby power to calculate the total cost for consumers of standby power consumption.

Situation before Official Mexican Standard (NOM):

Year	Number of cumulative sales of appliances[/a]	Average Standby power by appliance (kW)[/b]	Average Standby power for all appliances (kW)[/b]	Cost of kWh (pesos)	Hours unused average year of all appliances	Annual standby power consumption (kWh)	Annual Billing (mp)
2012[/e]	25,361,084	0.0047112	119,480	1.22	6,792	811,451,383	993
2013	52,654,872	0.0047112	248,065	1.26	6,792	1,684,741,417	2,130
2014	82,028,650	0.0047112	386,450	1.31	6,792	2,624,582,668	3,430
2015	113,640,929	0.0047112	535,380	1.35	6,792	3,636,046,836	4,912
2016	147,662,299	0.0047112	695,660	1.40	6,792	4,724,592,121	6,598
2017	184,276,352	0.0047112	868,154	1.44	6,792	5,896,092,679	8,512
2018	223,680,670	0.0047112	1,053,794	1.49	6,792	7,156,870,322	10,680
2019	266,087,890	0.0047112	1,253,581	1.54	6,792	8,513,728,629	13,133
2020	311,726,856	0.0047112	1,468,593	1.59	6,792	9,973,989,665	15,904
2021	360,843,853	0.0047112	1,699,991	1.65	6,792	11,545,533,488	19,030

Note: e /values estimated from 2012.
a /cumulative sales are considered in order to calculate the total standby power consumption for equipment and appliances that were purchased during the study period.
b /4.7112WkWequals0.0047112
Source: preparation using data from SENER.

Situation after Official Mexican Standard (NOM):

2019	266,087,890	0.00231	614,120	1.54	6,792	4,170,815,202	6,434
2020	311,726,856	0.00231	719,453	1.59	6,792	4,886,186,714	7,791
2021	360,843,853	0.00231	832,813	1.65	6,792	5,656,074,874	9,323

After discounting, wasted energy in standby mode is estimated at 18,714 mp, reaching a benefit of 19,486 mp. This is the benefit for consumers in a reduced spending on their electricity bill. The benefit is again the difference in costs between the unregulated scenario (before the new regulation) and the costs under the NOM regulation. Additionally, the RIA also calculates the costs of labelling, certification and laboratory tests which (after consultation with experts) are assumed to increase with 5,15%. After discounting, the regulatory costs amount to 2,589 mp.

In order to assess the impact of the regulation, a table of costs and benefits for each alternative has been drawn up as seen below:

	Alternative 2 (mp)
Unregulated costs (Alternative 1 costs)	38,201
Regulation costs	18,714
Gross benefits	19,487
Regulation costs of the NOM	2,589
Net Benefits	*16,898*

The first row represents the unregulated costs (which are the costs of the current scenario), the second row shows the regulation costs of the NOM scenario (meaning the electricity costs of the scenario). The gross benefits is the difference between the two scenario's and the fourth row shows the regulatory costs for the producers and government.

2. Food Regulation Standing Committee Decision Regulation Impact Statement: Pregnancy warning labels on packaged alcoholic beverages, October 2018, Joint Food Regulation System, Australia[4]

Problem – The Australian government advises that pregnant women do not consume any alcohol. If a pregnant woman consumes alcohol (of any type), it can cause damage to the developing fetus. Babies exposed to alcohol during pregnancy are more likely to be born prematurely and may be born with permanent damage to their brain and other critical organs, functions and structures. These consequences are captured under the diagnosis of FASD (Fetal Alcohol Spectrum Disorders). In the current legislation, alcoholic beverage producers have discretion in choosing to attach a label warning pregnant women about the dangers of drinking while pregnant. Additionally, they can choose the design of the label. Packaging campaigns in Australia associated with pregnancy warning labels on alcohol beverages are said to not address effectively the problem (placing the relevant pictogram next to the message 'best consumed in moderation' or directing the consumer to the webpage of the campaign instead of illustrating the advice on the packaging). The problem is triggered by an asymmetry of information that the customers could face and a government failure in terms of a lack of regulation to standardise the labelling procedure. In order to mitigate the harm, the government suggests a mandatory standardised system of labelling that warns women about the dangers of drinking alcohol while pregnant.

Why is this a useful example?
The RIA assesses both the costs incurred as the benefits that would arise, and calculates the net benefits in a rather particular method as we will see below.

First, the costs of the producers were examined – since they will be the ones implementing a one-off action to replace their labeling systems (see table below). The costs considered were associated with impacts such as decrease in alcohol sales, the need to promote adoption of voluntary labelling and also non-monetary impacts such as reduced labels space and aesthetics.

Cost item	Average estimated cost per labelled SKU	Range of estimated total cost per labelled SKU
Redesign and approval of artwork	$97.26	$0.00 - $1,151
Production of new print plates	$214.39	$0.00 - $3,454
Administration Costs	$68.29	$0.00 - $1,017
Additional Costs	$7.43	$0.00 - $128
Total Cost	$344.44	$0.00 - $4,743

The benefits were considered at the society level, representing a significant decrease in costs, including costs associated with the consequences of FASD prevalence. For the community, the cost under status quo is related to the impact of FASD and is estimated at around AUD $1,18 billion per year. These costs consist of costs to treat illnesses and litigate behavioral problems.

The economic and productivity benefits through increased participation in the labor force as well as the reduced burden on healthcare and social support systems, the education system and protection systems are identified as potential benefits which however are not measured in the Impact Assessment. The impact on the justice and legal system has been also identified as significant since it would reduce the costs associated with crime and juvenile and adult corrective systems. The latter

[4] Food Regulation Standing Committee Decision Regulation Impact Statement: Pregnancy warning labels on packaged alcoholic beverages, October 2018, Joint Food Regulation System, Australia, can be accessed at https://ris.pmc.gov.au/sites/default/files/posts/2018/10/pregnancy_warning_labels_on_packaged_alcoholic_beverages_decision_ris.pdf

were considered due to the higher risk of delinquency and behavioral problems faced by FASD patients. So, the latter effects are again examples of avoided costs.

What is interesting in this RIA is the approach to compare the costs and benefits. The costs are determined by listing both the potential costs of labelling – the main indicator used for assessing costs – and the FASD cases that would need to be prevented to offset this cost. As mentioned before, the RIA identified the benefits as the avoided costs associated with a decrease in the prevalence of FASD at the society level (avoided costs for prisons, youth detention, healthcare, etc.). This is a particular way of monetising the benefits of a program, while this is often done by calculating the actual monetary benefits *gained* as a result of the program. In this particular RIA benefits are correctly seen as avoided costs, and the money that would have been spent on these costs which now in turn could be redirected to other purposes benefitting the society.

Data limitations regarding the incidence and cost of FASD led researchers to model a hypothetical scenario in order to estimate associated costs. Because FASD is not diagnosed at birth it is difficult to quantify cases at birth. Therefore, prevalence is calculated by taking into account the diagnosed cases during the childhood years. In the model it is assumed that the prevalence and number of cases at birth are the same. Numbers of prevalence in USA and Canada are used as proxies to estimate the cases in Australia and New Zealand, based on the assumption that the rate of drinking while pregnant is higher in the latter thus multiplying the US rate by three (it is considered that Australian women drink three times more than women in the USA). An upper incidence of 9% is derived using this assumption. Using the conservative current estimated Australian FASD incidence rate of 2%, a plausible incidence estimate for FASD in Australia is between 2% to 9%. The mid- point of these estimates is 5% which has been used as the plausible incidence estimate for FASD in Australia. In the table below the Health Technology Analysts estimated costs per case of FASD. The cost per case of FASD allows for modelling the cost of FASD at different hypothetical incidence rates. Using incidence rather than prevalence means that the numbers reflect the cost of existing cases, not new cases. A limitation to this approach is that it includes only medical costs, and not legal and justice costs (these were estimated from international data and comparison).

Table 1.1- Estimated yearly cost of new cases of FASD in Australia

FASD incidence rate (per live births)	Estimated number of FASD cases (based on 311,104 births in 2016[92])	Yearly cost of new cases of FASD in that year (based on AUD $39,494 per case of FASD)
2%	6,222	$245.73 million
5%	15,555	$614.33 million
9%	27,999	$1.11 billion

The table below shows the yearly costs of new cases – which are medical costs as determined in the table above by the Health Technology Analysts – as well as the yearly costs of the prison and youth detention system. The combined annual cost is obtained by considering AUD $75,662 paid per case at a 5% incidence rate for Australia and the NZD $95,978 per case at a 3% incidence rate. This can be considered the cost of the status quo.

Cost	Australia ($AUD)	New Zealand ($NZD)
Cost of new cases of FASD in one year (based on mid-point estimate from Tables 1.1 and 1.2)	$614.33 million	$172.10 million
Yearly costs to the prison and youth detention system	$562.6 million	$99.02 million
Combined annual cost	**$1.18 billion**	**$171.12 million**

After determining the costs under the status quo and the preferred option, the benefits are also scrutinized. In general, the benefits are associated with the avoided costs as a consequence of the decrease in FASD prevalence. In order to emphasize the benefits, for each option, next to the potential costs of labelling changes in one year, the FASD cases that would need to be prevented to offset these costs have been listed. It is seen from the table that the numbers are limited, which implies easiness in reaching these targets and overcoming thus the costs of implementing the program.

Scenario	Potential cost of labelling changes in one year	FASD cases that would need to be prevented to offset this cost (at 5% FASD incidence rate and AUD $75,662 per case of FASD)
Average costings (includes transition period for label changes)		
1	7.2 million	0.62% (96 cases)
2	6.6 million	0.56% (88 cases)
3	13.9 million	1.18.% (183 cases)
Upper costings (no transition period for label changes)		
1	$99.7 million	8.47% (1,318cases)
2	$91.3 million	7.76% (1,207 cases)
3	$191.0 million	16.23% (2,524 cases)

3. Impact assessment accompanying the document Proposal for a Directive of the European Parliament and of the Council on transparent and predictable working conditions in the European Union[5]

Problem - There is a risk of insufficient protection of workers, including the new and non-standard forms of employment. Directive 91/533/EEC has been adopted 27 years ago and deals with the rights to transparent and predictable working conditions. However, a recent review shows that whereas the Directive is still fundamentally relevant, the changes occurred in the labour market in these past 27 years expose several gaps in the protection mechanisms. Notable gaps are the following:

- Some workers are not receiving a written statement on working conditions at all;
- Statements on working conditions include insufficient information;
- There is a lack of enforcement mechanisms that could guarantee an effective implementation of legal provisions.

The problem identified is thus that the working conditions of a growing number of workers are insufficiently guaranteed. This is mainly due to drivers such as the growth of non-standard employment, absence of EU criteria for identifying an employment relation, diversity of national requirements concerning written statements, and issues of enforcement. The problem is a consequence of failure at EU level to enforce a homogenous legislation for employment conditions. In order to litigate this, the EU Commission aims to revise the Directive in order to promote a more secure and predictable employment while enduring labour market adaptability and improving living and working conditions.

Why is this a useful example?

The revised Directive under the preferred option creates new obligations for businesses that translate into one-off and recurrent costs. These costs are related to:

- Issuing new or revised statements (estimated at 15-153 EUR);
- Researching information about the new legislation and learning how to correctly apply it (estimated at 39-53 EUR depending on the size of the firm);
- Replying to requests from employees for other forms of employment.

The aggregated costs are presented in the table below.

[5] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017SC0478&from=EN

Type of cost	One-off	Recurrent (per year)
Familiarisation	852.5 m EUR[154]	none
Providing written statements to newly covered employees	114-152 m EUR[155]	11-30 m EUR[156]
Replying to the requests for another form of employment	None	20-258 m[157]
Total costs (maximum)	**977.5 m EUR**	**288 m EUR**

As it can be noted, the majority of the costs are one-off costs that would be encountered with any change in legislation. In order to avoid each of the above-listed costs, a list of three potential solutions is also provided, which could result in benefits if implemented. All three solutions are intended to reduce the administrative burden associated with informing and complying with the new regulation.

- The use of an electronic statement, of which the cost is estimated to be about half of the cost of an e-invoice. In the Proposal for a Directive on e-invoicing in public procurement, it is estimated that an e-invoice leads to savings in administrative costs of 60-80%. There is no obligation for companies to use such electronic templates, but it is expected they would voluntarily do so to simplify the processes and to have more certainty of compliance.
- In order to ease the process of replying to the request for other forms of employment, Member States may extend the deadline and allow for oral replies under specific circumstances. The rationale for doing so is reducing the administrative burden associated with replying to all requests which in the case of micro, small and medium enterprises could be substantial due to the reduced number of employees.
- In order to reduce information costs that would be borne by workers and employers in order to familiarise themselves with the new Directive, Member States are required to make all relevant information easily available and accessible.

REFIT Cost Savings – Preferred Option(s)		
Description	***Amount – one-off***	***Amount – recurrent***
1. Member States are required to develop electronic templates and models of written statements.[159]	30-40% savings per written statement. One-off: 46-60 m EUR	30-40% savings per written statement. Recurrent: 9-12 m EUR
2. In micro, small, or medium enterprises, Member States may provide for the deadline to reply to requests for another form of employment to be extended from one month to no more than three months and/or allow for an oral reply to a subsequent similar request submitted by the same worker if the justification for the reply as regards the situation of the worker remains unchanged.	-	Some savings (at least 10%) and facilitation of compliance with the administrative requirements. Recurrent: 2-26 m EUR
3. Member States are required to make information related to the content of the new directive easily available to workers and employers.	10-20% savings on the familiarisation costs. (85-170 m EUR)	-
Total savings	**230 m EUR**	**38 m EUR (at least)**

To estimate the number of non-standard workers, a group that is specifically targeted by the lagging Directive, a variety of sources was used. The main source was the Eurostat Labour Force Survey, together with ILO statistics and national level statistical databases. To calculate the price of written statements, the average time per contract was taken into consideration together with the annual fixed costs for filling in such a form.

All direct benefits were quantified, but not monetized. Direct benefits were considered to be the number of employees relying on better work condition rights – the main objective of the policy. It is thus a proportionate measure.

I. Overview of Benefits (total for all provisions) – Preferred Option		
Description	***Amount***	***Comments***
Direct benefits		
Higher number of workers entitled to written statements	Some 2-3 million more workers have a right to a written statement	
Workers getting more comprehensive information in the written statements	5-31 million workers per year	
Written statements issued on the 1st day of employment	8-16 million workers per year	
Workers getting reference hours and receiving advance notice before an assignment	4-6 million workers	
Workers freed from exclusivity clauses	6-7 million casual and voucher-based workers	29% of part-timers in 2015 were involuntary (source EU-LFS). It can be assumed that most of the involuntary part-timers work less that they would want to because of lack of job opportunities rather than exclusivity clauses, but exclusivity clauses are a contributory factor for involuntary part-time.
Workers getting the possibility to request another form of employment	52 million (some 25% expected to use the right in practice)	
Workers getting the right to a max. duration of a probation period	3-6 million workers per year	
Workers getting the right to mandatory training without deduction from salary	Negligible	
Workers getting better access to redress	All workers whose rights are not respected	
Increased legal certainty for employers	16% of employers	

In contrast, the benefits that were monetised in this Impact Assessment were the indirect benefits. The IA shows that the preferred option leads to additional tax revenues for the government and to a reduction in payments for the employees.

Indirect benefits		
Additional tax revenues from workers enabled to get a second job with another employer	46-185m EUR p.a.	
Additional tax revenues from a 1-3% shift of undeclared work into the formal economy	8m-25m EUR p.a.	
Reduction in social security payments, due to undeclared workers entering the formal economy	4m-24m EUR p.a.	Assuming that reductions equate to 10-20% of the value of undeclared work brought into the formal economy.
Reduction in social security payments from workers enabled to get a second job with another employer	Unquantified but related to the expected additional 33m-133m extra hours workers per year by workers freed from exclusivity clauses	
Increased productivity, retention, loyalty etc.	16-20% of employers	
Reduced unfair competition	Benefits for some 80-84% of employers who already provide written statements to all workers	
Improved availability of workforce for secondary employers	91,000-363,000 workers available for extra work following ban on the exclusivity clauses	
Additional revenues for secondary employers as result of the above	42-167m EUR	
Improved detection of undeclared work	unquantified	
Improved health and work-life balance of workers	unquantified	
Workers enabled to get a second job with another employer	355-1,424m EUR p.a. increase in gross annual earnings for those workers	
Undeclared work brought into the formal economy	40m-120m EUR p.a.	

4. Decision Regulation Impact Statement - Household Refrigerators and Freezers, November 2017, A joint initiative of Australia, State and Territory and New Zealand Governments[6]

Problem - This decision Regulation Impact Statement proposes changes to energy efficiency regulations applicable to household refrigerators and freezers. Regulations in Australia and New Zealand require that household refrigerators and freezers supplied to consumers meet Minimum Energy Performance Standards (MEPS) and also display the Energy Rating Label (ERL). Although the current regulations have largely achieved their objective of promoting the development and use of more energy efficient refrigerators and freezers than would have been the case under business as usual, regulatory failures exist because:

- Current MEPS levels are set too low for Australia's and New Zealand's markets
- Requiring suppliers to test their appliances to the Australian and New Zealand regionally-specific test standard for refrigerators and freezers makes appliance testing more complex than necessary, resulting in an unnecessarily high regulatory burden.

Why is this a useful example?
The RIA shows how changes in the sustainability of products can result in monetary savings both for the consumers and the government through reduced energy consumption. The list of savings extends also to companies through increasing the cost of products (thus the price) and the energy efficiency.

The example lists the magnitude of impacts this legislation could have by taking into consideration the level of convergence of the suppliers' policies with the proposed legislation and monetising these impacts in terms of action needed to be undertaken in order to fully comply – such as changes to administrative resources, test costs and registration costs. The costs that consumers face are also taken into account and refer to a slight increase in the price of appliances. These costs are listed next to the typical payback period that would need to pass in order to neutralize the increase in price as a result of the regulation. The payback would consist in an energy bill savings that would pay-off the investment in a pricier but more energy efficient appliance. For the industry, the remaining costs are those of changing administrative resources, but which are also passed on to the consumers.

Group	Average price increase	Average annual saving	Typical payback period (years)
1	$9.20	$3.70	2.5
2	$3.50	$7.00	0.5
3	$4.80	$6.80	0.7
4	$1.90	$0.30	5.6
5B	$30.70	$10.90	2.8
5S	$55.50	$37.20	1.5
5T	$31.20	$14.30	2.2
6C	$17.70	$8.10	2.2
6U	$34.70	$10.40	3.4
7	$18.90	$11.90	1.6

The majority of benefits will be borne by consumers through reduced energy consumption due to improved efficiency of appliances, being estimated to reach $145 over the life of an average refrigerator. It is made clear that the regulation will not trigger any direct benefits for the customers but will cause an indirect effect to rise through reduced energy consumption – which is in fact an avoided cost. The main benefits listed are energy savings for consumers and the economy due to improved efficiency, reduced emissions and additional energy savings.

[6] Decision Regulation Impact Statement - Household Refrigerators and Freezers, November 2017, A joint initiative of Australia, State and Territory and New Zealand Governments, can be accessed at https://ris.pmc.gov.au/sites/default/files/posts/2018/05/household_refrigerators_and_freezers.pdf

In order to monetise the benefits, these are first quantified as seen in the table below, looking at energy saved and greenhouse gas (GHG) emissions reductions.

Indicator	Appliances installed 2015 to 2030	
	Australia	New Zealand
Energy savings (cumulative)	4,098 GWh	995 GWh
Emissions savings (CO_2-e cumulative)	3.5 Mt	104 kt
Benefits	A$1,180.6 m	NZ$82.1 m
Costs	A$300.6 m	NZ$39.1 m
Net present value	A$879.9 m	NZ$43.0 m
Benefit cost ratio	3.93 : 1	2.10 : 1

Thereafter, the RIA considers impacts concerning the volume of input sales as well as changes in stock, consumer product prices, administrative costs and compliance costs, energy consumption, energy tariffs and GHG emissions. These are quantified by calculating their reduction as a result of the program.

Option	Energy Saved (cumulative to 2030) GWh	GHG Emission Reduction (cumulative to 2030) Mt	Total Benefits (NPV, A$M)	Total Costs (NPV, A$M)	Net Benefit (NPV, A$M)	Benefit Cost Ratio
Option B	4,098	3.5	$1,180.6	$300.6	$879.9	3.9
Option C	5,605	4.7	$1,655.9	$401.7	$1,254.3	4.1

The study concludes with a sensitivity analysis, running the model by varying the selected discount rate, and achieving the same robust results.

	Discount rate (real)			
	0 per cent	3 per cent	7 per cent	10 per cent
Option B				
Total Benefits (NPV, $M)	$2,929.5	$1,923.9	$1,180.6	$858.4
Total Costs (NPV, $M)	$457.0	$377.4	$300.6	$258.3
Net Benefits (NPV, $M)	$2,472.5	$1,546.4	$879.9	$600.1
Benefit Cost Ratio	6.41 : 1	5.10 : 1	3.93 : 1	3.32 : 1
Option C				
Total Benefits (NPV, $M)	$4,179.2	$2,725.9	$1,655.9	$1,194.7
Total Costs (NPV, $M)	$610.0	$503.8	$401.7	$345.6
Net Benefits (NPV, $M)	$3,569.2	$2,222.1	$1,254.3	$849.2
Benefit Cost Ratio	6.85 : 1	5.41 : 1	4.12 : 1	3.46 : 1

5. Consultation Regulation Impact Statement - Accessible adult change facilities in public buildings, Australia, March 2018, EY[7]

Problem – The five year review of the Disability (Access to Premises – Buildings) Standards 2010 relates to the provision of accessible adult change facilities (AACFs) in public buildings. The AACFs are sanitary facilities with additional features to assist people with more profound or complex disability who are unable to use standard accessible facilities independently, located in public spaces such as shopping malls, swimming pools, museums, stadiums, airports etc. Provision 6b recommends that the Australian Government "investigate[s] whether, and how, accessible adult changing facilities should be included in the Standards". AACFs are currently not required by legislation. Participation of people with a disability within their communities could include social, cultural, political or economic participation.

Why is this a useful example?
The study shows the importance of taking vulnerable populations into account during a Regulatory Impact Assessment and the economic impact that this might have. It distinguishes between two categories of costs – capital and ongoing, incurred by the public buildings – and two types of benefits – measured and qualitative, incurred by the society.

Capital expenses are related to impacts involving the supply, construction and installation of new facilities and other actions needed to comply with the new regulation, reaching $132,000 per facility under option B (preferred option). Ongoing operating expenses are those related to ongoing maintenance. These costs are estimated per square meter and it is assumed that they do not differ by location. The costs of the proposal are not calculated directly but informed by two reports: the 'Report on [the] Cost of Installing Typical Accessible Adult Change Facilities' and 'The 2017 Benchmarks Survey of Operating Costs, Retail, Shopping Centres'. In Australia, the costs of regulatory burden are measured by the Regulatory Burden Measurement framework.

Change in costs ($million)	Business	Community Organisations	Individuals	Total change in cost
Total, by sector	$771,219	$0	$0	$771,219

The benefits are separated into two categories – the ones that can be monetized and the ones that cannot be expressed in monetary terms. The quantifiable benefits estimate the direct value of an additional visit to a public space that hosts an AACF. The idea behind this is that each additional trip (which wouldn't have been performed had the AACF has not been installed), holds an intrinsic value or utility. In order to calculate this utility, a break-even value of utility is initially calculated – the value at which the value of the trip equals the costs and capital invested in an AACF.

In the next step the willingness to pay (WTP) for this additional trip is calculated – the price the targeted population would be willing to pay to be able to access an AACF in a public space. Qualitative benefits are perceived as long-term benefits that improve the quality of life, wellbeing and mental health and their careers. These are not quantified due to a difficulty to put a price on them.

[7] Consultation Regulation Impact Statement - Accessible adult change facilities in public buildings, March 2018, EY, can be accessed at https://ris.pmc.gov.au/sites/default/files/posts/2018/03/accessible_adult_change_facilities_in_public_buildings_consultation_ris.pdf

	Major shopping centre	Smaller shopping centre	Museum	Stadium
Present Value (PV) of Costs	$88,382	$88,382	$88,382	$88,382
Scenario				
Break Even Point (BE, Required benefit per person per trip to break even)	$1.71	$3.67	$13.62	$15.89
Willingness to Pay (WTP)	$13.16	$13.16	$23.16	$37.16
Mid Point of WTP and BE	$7.44	$8.42	$18.39	$26.52
Results - WTP				
Benefits (PV)	$678,294	$316,457	$150,336	$206,669
Net Benefits (PV)	$589,912	$228,075	$61,954	$118,288
Results - Mid Point				
Benefits (PV)	$383,252	$202,419	$119,348	$147,525
Net Benefits (PV)	$294,870	$114,038	$30,966	$59,144

In a nutshell, the study measures the use value of each additional trip to a public building as a result of providing AACFs. The basis of the modelling approach is drawn from environmental economics literature (specifically the method of valuing the trip to a facility is measured as the intrinsic monetary value of the trip).

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