Supplement to

RISK SHIFTING, TECHNOLOGY POLICY AND
SALES CONTINGENT CLAIMS

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A Alternative formulations of ‘subsidy’

A.1 Economics literature

Many definitions exist for what constitutes a subsidy.\(^1\) Insofar as taxation has a differentiated, heterogeneous impact on individual economic actors it is intuitively attractive to make a distinction between positive and negative tax-rates, and to call the negative rates subsidies. However it can be argued that this does not resolve the whole question, for among those paying positive rates, the actors paying the higher rates may be viewed as subsidizing those paying the lower rates. Insofar as taxation at both positive and negative rates exists and persists within the economy, any taxation rate—positive or negative—may be chosen as the norm below which subsidization is judged to be taking place.\(^2\) According to this view the choice of benchmark is purely arbitrary, and the only way to establish this tax-rate norm is through convention—historical, political, institutional, or legal.

The notion that the whole concept of subsidy turns on an artifact of convention is, from a purely theoretical perspective, less than wholly satisfactory. Furthermore, when the possibility of market incompleteness is admitted, it no longer holds that the price interval of subsidies is contiguous with the price interval of taxes. As discussed in the main text, a price paid by government may fall below those that clearly constitute subsidies, and yet in no way must it therefore constitute a tax: the difference with respect to the lower bound of the subsidy region may constitute the government’s gain from trade, rather than a tax. In the present context, then, the intuitively appealing definition of subsidy as negative taxation suffers from technical limitations.

Yet overwhelmingly, subsidies tend to be defined as the subset of government transfers that are objectionable either by way of distortion or moreover by way of the welfare loss associated with that distortion. Above we have seen that Rickett’s (1985) normative conceptualization incorporates the distortion element but not the justification (net welfare) element. Generally the subsidy literature tends to go further, employing a definition that results from the intersection of

\(^1\)Often, definitions are given as the union (or intersection) of a list of non-mathematical criteria. See e.g. Lehner, Meiklejohn and Reichenbach (1991), Schwartz and Clements (1999), OECD (2001), Article 87 of The EC Treaty, and Article 1 of the Subsidies and Countervailing Measures (SCM) Agreement under the 1994 (Uruguay round) GATT.

\(^2\)This is Ricketts’ (1985) purely normative conception of subsidy: “A subsidy is a tax which is too small” (p. 401).
all three criteria: (1.) a net government transfer that is (2.) distortionary and (3.) unjustified (a net welfare reduction). However from the standpoint developed here, the justification dimension is not native to subsidy per se.

In summarizing the literature on subsidies the authors of OECD (2001) acknowledge that “There is no commonly accepted definition of a subsidy” (p. 24). These authors go on to observe that most definitions nevertheless share certain common elements, from which they construct the following synthetic definition (OECD, 2001, p. 24): “A subsidy is [1.] a government policy, which (in the light of the policies of other governments); [2.] favors certain firms relative to others (i.e. affects or distorts competition); and [3.] reduces overall welfare.” By virtue of the manner of its origination and construction, this is perhaps the most parsimonious exemplar definition representative of the literature. Notice the extent of the correspondence between [1.], [2.] and [3.] and (1.), (2.) and (3.).

Other representative definitions may be cited, but they do not bring additional insight beyond OECD (2001). For instance, the synthesis presented by Lehner, Meiklejohn and Reichenbach (1991) employs five criteria to stipulate what is, in essence, a refinement of (1.) and (2.).

### A.2 Legal criteria & interpretations

Although the specific terminology (criteria sets) laid out in the EC Treaty and the SCM Agreement differ, the ultimate interpretations made of these terms (criteria) share considerable overlap in operational application. From a strictly legal point of view ‘state aid’ and ‘subsidy’ are definitionally distinct concepts, the former being defined and employed in the EU context, the latter being defined and employed in the WTO context of Uruguay Round GATT signatories. But from the perspective of economic theory and insofar as the operational interpretations coincide, ‘state aid’ and ‘subsidy’ may be taken as synonymous.

The wording and formulation of legal criteria are evidently modelled on the notion of *fair market value*:

> ...the price at which the property would change hands [in a hypothetical transaction] between a [hypothetical] willing buyer and a [hypothetical] willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of the relevant facts. (US Revenue

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3Darryl Biggar was the primary author of this report.
Fair market value, it will be noted, is interpreted as being a consensus price obtained from a broad market, not a specific transaction in which the parties are identified. As we have reiterated numerous times, such a unique ‘consensus [market] price’ only exists when the market is complete.

The rest of this section presents, for the EU context and the WTO context respectively, (I) the legal criteria established by treaty, (II) the legal interpretation applied in implementation, (III) the conditions specific to support for R&D, and (IV) the status of Launch Aid.

A.2.1 EU context

I. Criteria  In the EU context the legal basis for European Commission vetting of state aid is based on Article 87(1) of the EC Treaty:

Save as otherwise provided in this Treaty, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favoring certain undertakings or the production of certain goods shall, insofar as it affects trade between Member States, be incompatible with the common market.

This ‘State Aid’ which is incompatible with the common market satisfies each of the following criteria simultaneously:4 (a) A transfer of State resources; (b) Constituting an economic advantage that the undertaking would not have received in the normal course of business; (c) Delivered by a selective scheme targeting some but not all firms, industries or regions; (d) Having at least a potential effect on competition specifically insofar as it affects trade between Member States.5 To measures and schemes satisfying these criteria, Article 87(2) lists three categories of outright exceptions while Article 87(3) lists five categories that ‘may be considered compatible with the common market.’

II. Interpretation  During the 1990s a much more succinct criterion—essentially an interpretation of Article 87(1) and specifically criteria (a) & (b) above—for judging ‘state aid’ gained

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4Vademecum: Community Rules on State Aid
5Under the de minimis rule aid to an enterprise falling below Euro 100,000 over three years is not considered State Aid as it is deemed too small to distort competition and trade.
acceptance in the EU competition policy arena: the Market Economy Investor Principle (MEIP).

According to the MEIP, a financial investment by the Government incorporates an element of aid (subsidy) if a hypothetical private investor would not have invested at the same terms and conditions under the same circumstances (OECD, 2001, p. 26).

“This principle of using an [hypothetical] investor operating under normal market conditions as a benchmark to determine both whether aid is involved and to quantify it, has been adopted by the Council and the Commission... ...and has been endorsed by the Parliament... The principle has also been accepted by the [European] Court in every case submitted to it as a yardstick for the determination of whether aid was involved.” (OJ C 307, 13.11.1993, p. 3.)

According to one possible view, application of the MEIP must categorize every possible instance of government funding as state aid insofar as recipient firms can be safely assumed to be rational in choosing the cheapest source of funding: if government is supplying the funding, then it must be the cheapest source of funding, and therefore by the MEIP it qualifies as ‘state aid’. However, this interpretation of the MEIP is not the one currently employed in EU competition affairs. Instead, application of the MEIP is carried out on a case-by-case basis as a non-trivial exercise.

Of course in a strict sense the MEIP is a necessary—but not sufficient—condition for qualification as state aid under Article 87(1), in that (c) selectivity causing (d) distortion of trade between Member States are also required. Moreover to qualify as state aid the support must be deemed to fall outside the de minimis rule, the three categories of outright exceptions listed in Article 87(2) and the five categories of possible exceptions listed in Article 87(3).

In the absence of frictions and payoff-relevant market incompleteness the MEIP is equivalent to the strict economic conception of subsidy formalized in Definition 5.1.

III. Community framework for State Aid for R&D

This framework sets out the treatment of state aid for R&D under the EC Treaty (OJ C 45, 17.02.1996, p. 5). The basic premise of the treatment of state aid for R&D is that the closer the R&D’s proximity to the market, the more distortive of market and trade outcomes the aid may be. The Commission framework thereby distinguishes between fundamental, industrial, and precompetitive R&D activity, and

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6Also see the EU’s State Aid Guidelines, or e.g. OJ C 307, 13.11.1993, p. 3 available at http://europa.eu.int/comm/competition/state_aid/legislation/30793_en.html

7see footnote 5 above
places maximum acceptable aid-intensity ceilings in accordance with market proximity. The
standard maximum allowable state aid intensities are 100%, 50% and 25%, respectively, for funda-
mental, industrial, and precompetitive R&D. Various supplementary allowances are made for
e.g. SME’s, Article 87(3)(a) regions, Article 87(3)(c) regions, projects linked to EU R&D frame-
work programs, and projects involving cross-border co-operation, but only up to the absolute
upper limits of 75% for industrial R&D and 50% for pre-competitive R&D. Finally, schemes that
apply to large companies are required to have an incentive effect on the company to undertake
the R&D: it is necessary to demonstrate that the State Aid induces the firm “to pursue research
which [it] would not otherwise have pursued,” or results in “expanding the scope of research or
speeding it up” (point 6.2).

IV. The status of Launch Aid under EU State Aid regulations  Launch Aid support
for Airbus programs receives somewhat different treatment than Launch Aid support for other
civil aerospace R&D programs. The EC Treaty stipulates that aid shall be deemed incompatible
with the common market “insofar as it affects trade between Member States” (Article 87(1)).
Thus the position of the Commission is that Launch Aid support for Airbus programs does not
affect trade between Member States, and hence does not qualify as State Aid under Article
87(1). Moreover Mr. Mario Monti, speaking on behalf of the Commission, has stated that even
if this were not the case, then Airbus programs “should normally qualify for the exception under
Article 87(3)(b) in respect of important projects of European interest” (OJ C 113 E, 18.04.2001,
p. 157).

In contrast, Launch Aid support for programs that do compete with the products of other EU
civil aerospace manufacturers qualifies as State Aid under Article 87(1). This is the case with UK
and other European nations’ aero-engine programs. As such, this Launch Aid support becomes
subject to the conditions set out in the Community framework for State Aid for R&D regarding
the maximum permissible intensity of aid, the demonstration of the State Aid’s incentive effect,
and general compliance with Article 87(3)(c), under which ‘aid to facilitate the development of
certain economic activities’ ‘may be considered compatible with the common market.’

A.2.2 WTO context

I. Criteria  Among the global international conventions on trade, the SCM Agreement provides
the currently operative definition of what constitutes a subsidy in world trade: the coincidence
of (i) a financial contribution (ii) by a government or public body which (iii) thereby confers a benefit to the recipient (SCM Agreement; Baldwin, 1995).

II. Interpretation Substantively, the WTO dispute resolution mechanism has converged on a MEIP-type interpretation of subsidy:

In our view, the market place provides an appropriate basis for comparison in determining whether a “benefit” has been “conferred,” because the trade distorting potential of a “financial contribution” can be identified by determining whether the recipient has received a “financial contribution” on terms more favorable than those available to the recipient in the market (WTO Appellate Body, 1999, p. 39).

Here in the GATT/WTO context this MEIP-type condition is both necessary and sufficient for qualification as ‘subsidy’. Again, as in the EU context, the MEIP is equivalent to the strict economic conception of subsidy formalized in Definition 5.1 in the absence of frictions and payoff-relevant market incompleteness.

III. R&D subsidies under the SCM Agreement Subsidies fall into one of three categories: non-actionable subsidies, actionable subsidies, and prohibited subsidies. Government “assistance [subsidies] for research activities conducted by firms” are explicitly listed as falling in the non-actionable category (SCM Agreement, IV:8.2). The guiding principle of the SCM Agreement is that only subsidies which distort the allocation of resources within the economy should be subject to discipline. Hence only ‘specific’ (R&D) subsidies are subject to the disciplinary measures laid out in the SCM Agreement.

IV. Launch Aid under the SCM Agreement As a condition for receiving Launch Aid, UK civil aircraft manufacturers are required to demonstrate that the project would not go forward without the Launch Aid support—that is, the civil aircraft manufacturers are required

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8Bhagwati (1994, p. 240) has noted that the preoccupation with the cross-national equalization of regulatory burdens (e.g. environmental protection standards and equipment), as typically called for and argued for as a precondition of fair trade, “focuses mistakenly on absolute advantage.” Although not pursued here, it may be asked whether Bhagwati’s observation also applies to the drive for cross-national equalization of taxation and subsidies, and if it is the case, what policy standards need to be implemented in order to ensure neutral effects on comparative advantage.
to demonstrate that equivalent financing is not forthcoming from other (private) sources. Hence, UK Launch Aid immediately qualifies as a subsidy under the WTO’s MEIP-type condition.

Since civil aerospace product programs generally involve a large export component, it is important to note at this juncture that export subsidies—subsidies, the granting of which is contingent, in law or in fact, whether wholly or as one of several conditions, upon export performance—are explicitly listed as prohibited subsidies in the SCM Agreement. Under these provisions, Canada has been taken to task for its Technology Partnerships Canada (TPC) support—which takes the form of a SCCo similar to Launch Aid—for its aircraft industry’s (regional aircraft) development programs. Ultimately, however, Canada was able to restructure the TPC program and its documentation to the satisfaction of the WTO such that de facto export contingency is no longer an issue. The Canadian regional aircraft industry once again receives TPC SCCo support under the provision that the “mere fact that a subsidy is granted to enterprises which export shall not for that reason alone be considered to be an export subsidy” (SCM Agreement, 3.1(a) footnote 4).

If it were not for the fact that the European civil aircraft industry is predominantly engaged in the Large Civil Aircraft (LCA: civil aircraft with >100 seats) sector and the fact that for the LCA sector these issues are separately codified in the 1992 EC-US Bilateral Large Civil Aircraft Agreement concluded under the auspices of GATT, it is conceivable that UK, German, French and Spanish Launch Aid schemes for Airbus programs could also be seen as ‘prohibited export subsidies’ under WTO definitions and procedures. Yet as it stands, the 1992 EC-US Bilateral LCA Agreement only concerns LCA programs, not e.g. rotary-wing aircraft (helicopter) programs, aero-engine programs, regional aircraft programs or business jet programs. Hence Launch Aid for any such non-LCA programs qualifies as a ‘subsidy’ in the first instance, and it remains then to be determined whether export contingency is present or absent.
B Article 87 (ex Article 92) of the EC Treaty

1. Save as otherwise provided in this Treaty, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favoring certain undertakings or the production of certain goods shall, insofar as it affects trade between Member States, be incompatible with the common market.

2. The following shall be compatible with the common market:

(a) aid having a social character, granted to individual consumers...

(b) aid to make good the damage caused by natural disasters or exceptional circumstances;

(c) aid granted to the economy of certain areas of the Federal Republic of Germany...

3. The following may be considered to be compatible with the common market:

(a) aid to promote the economic development of areas where the standard of living is abnormally low or where there is serious under-employment;

(b) aid to promote the execution of an important project of common European interest or to remedy a serious disturbance in the economy of a Member State;

(c) aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest;

(d) aid to promote culture and heritage...

(e) such other categories of aid as may be specified by decision of the Council [of ministers] acting by a qualified majority on a proposal from the Commission.

III. Principles to be used in determining whether aid is involved

11. ...To ensure respect for the principle of neutrality the aid must be assessed as the difference between the terms on which the funds were made available by the State to the public enterprise, and the terms which a private investor would find acceptable in providing funds to a comparable private undertaking when the private investor is operating under normal market economy conditions (hereinafter ‘market economy investor principle’). ...if any public funds are provided on terms more favourable (i.e. in economic terms more cheaply) than a private owner would provide them to a private undertaking in a comparable financial and competitive position, then the public undertaking is receiving an advantage not available to private undertakings from their proprietors.

12. This principle of using an investor operating under normal market conditions as a benchmark to determine both whether aid is involved and to quantify it, has been adopted by the Council and the Commission in the steel and shipbuilding sectors, and has been endorsed by the Parliament in this context. In addition the Commission has adopted and applied this principle in numerous individual cases. The principle has also been accepted by the Court in every case submitted to it as a yardstick for the determination of whether aid was involved.

29. This communication, by making clearer how the Commission applies the market economy investor principle and the criteria used to determine when aid is involved, will reduce uncertainty in this field. ...
References


