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Working Package 3: A new national accounts architecture (T3)

Day 2: Working group 3

**On the reliability and practicability of the new
architecture of national accounts system**

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- **Place: CFMR, Calea 13 Septembrie 13, Bucharest, Romania**



Issues discussed

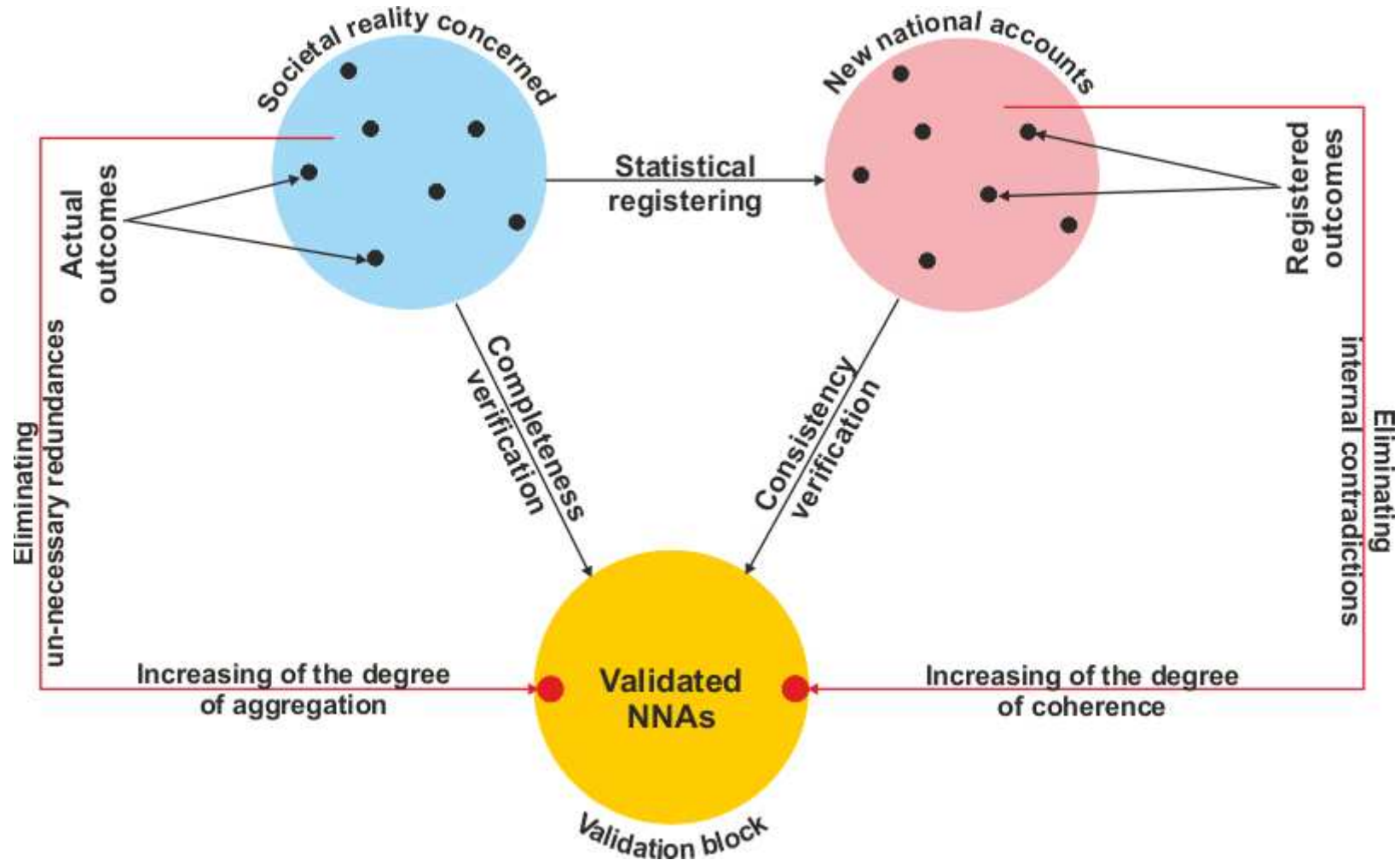
- **On the validity**
- **On the observability**
- **On the controllability**
- **On the reliability**
- **On the practicability**
- **Suggestions on needed research (FP8 - 2014-2020) in the matter of ensuring the SNA practicability**
- **Expected feed-backs aimed at improving the final Report**

Validity of the new national accounts (NNAs) (1/2)



- The validity criterion of NNAs is *not* under the Popper falsifiability condition, but under a completeness one
 - argument: NNAs do not deliver knowledge, but only registration of factials, so they do not address the truth, but only the usefulness
 - NB: of course, the veracity of registration is another question, but it is simply a technological issue, not a conceptual one
- The completeness condition implies two criteria to be verified:
 - outcomes isomorphism with the reality addressed
 - argument: the NNAs must take over, in a specific way, all the outcomes (outputs as well as the spillovers) of the reality concerned
 - NB: however, this doesn't imply a structural isomorphism of the NNAs with the reality aimed, but only a functional one
 - internal consistence among the NNAs
 - argument: the NNAs must be non-contradictory among them, concerning the indicators registered
 - NB: however, some degree of redundancy could be accepted (after a deep analysis on the necessity), since it can play an internal control role (a kind of codification in order to avoid errors)

Validity of the new national accounts (NNAs) (2/2)

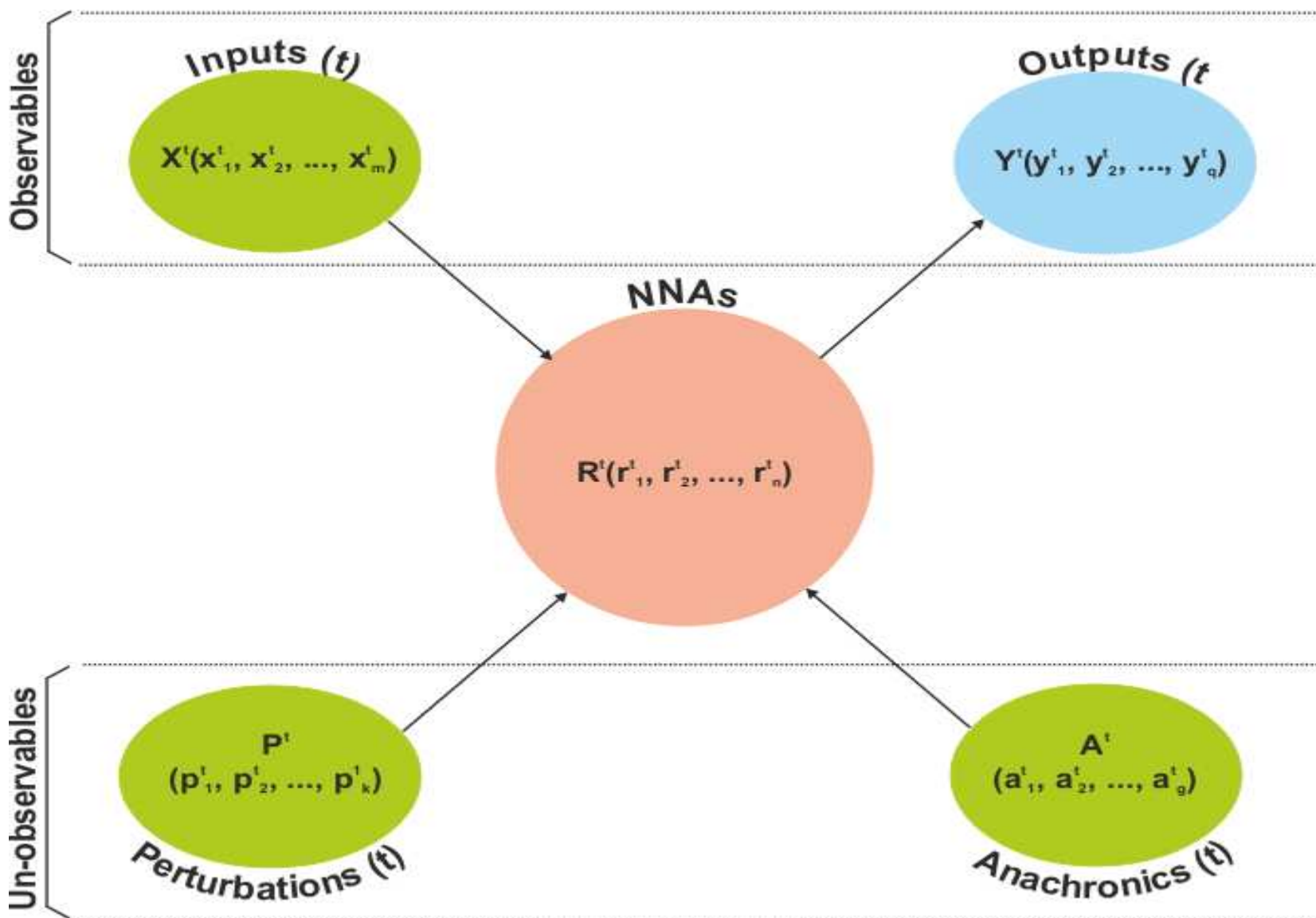


Observability of the new national accounts (NNAs) (1/2)



- **Observables vs un-observables of the NNAs:**
 - **observables of NNAs (O):** the variables (quantified as indicators) that are directly measurable by the observer (analyst, decision maker, etc.)
 - **un-observables of NNAs (\bar{O}):** the variables which are, alternatively:
 - *indirectly measurable:* ex: underground economy outcomes (both outputs and spillovers)
 - *un-measurable:* ex: internal feed-backs (either positive or negative), noise, etc.
 - the NNAs need have two categories of observables (O):
 - *inputs*(X_t): the vector of independent (exogenous) variables coming from other NAs (old or new) at the moment „t”
 - *outputs*(Y_t): the vector of dependent (endogenous) variables, at the moment „t”
 - The NNAs could have two categories of un-observables (\bar{O})
 - *actual perturbations* (hidden known variables): taken over through indirect measurement related to a benchmark pre-established (ex: underground economy – black, grey)
 - *anachronic perturbations* (hidden un-known variables, lags & leads): taken over through methodological considerations (ex: rational/adaptive expectations)

Observability of the new national accounts (NNAs) (2/2)

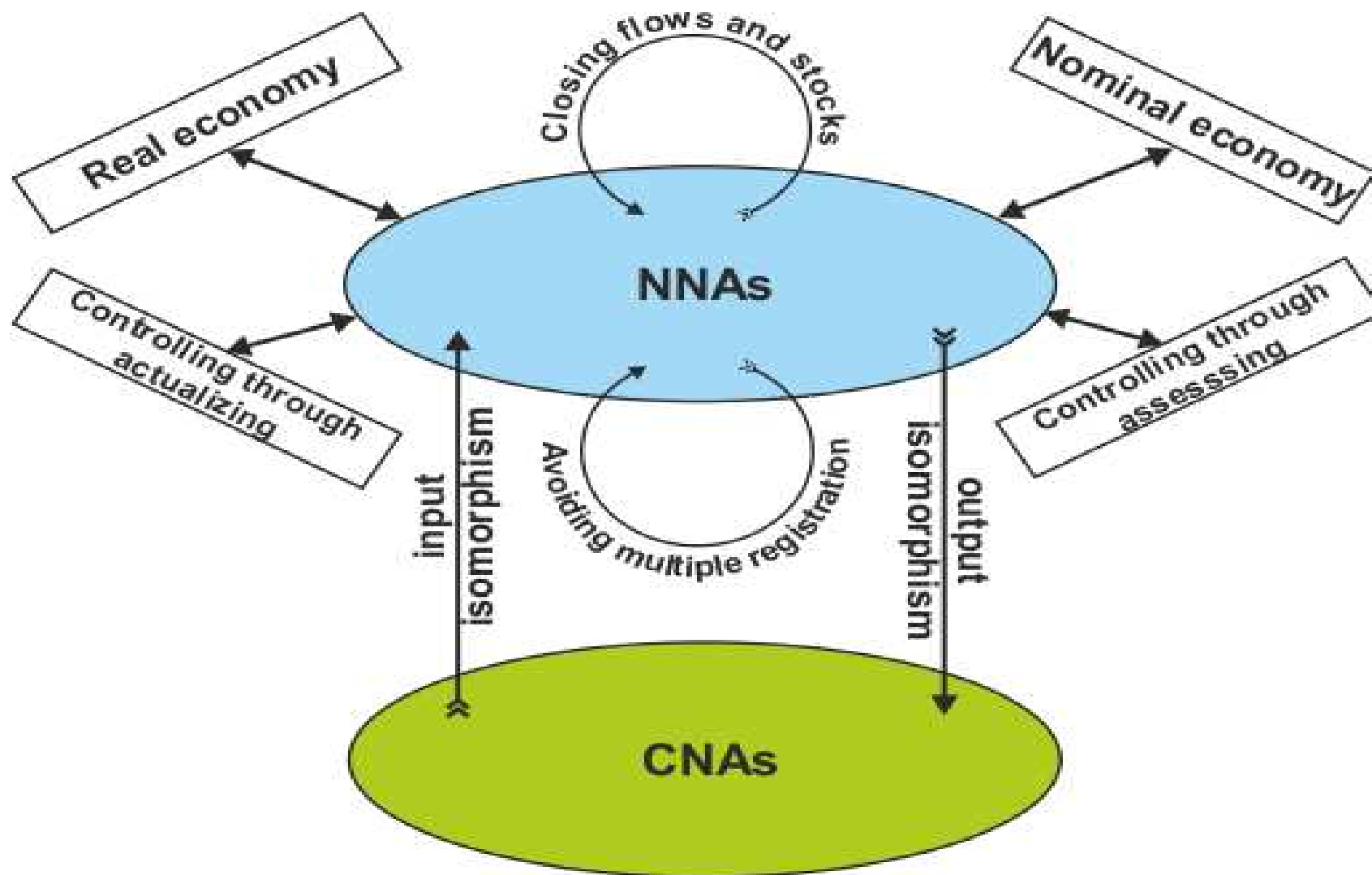


Controllability of the new national accounts (NNAs) (1/2)



- **controllability of the NNAs means the possibility to discretionary actualize the set of variables measured**
 - **NB1**: actualizing means, alternatively: a) introducing; b) deleting; c) modifying
 - **NB2**: replacing = deleting & introducing
- **controllability of the NNAs addresses both the input and the output vectors**
- **controllability of the NNAs addresses only the observables**
- **causal conditions to generate controllability actions over the NNAs:**
 - **complete *capturing* of CNAs (current national accounts) outputs into NNAs inputs: input isomorphism**
 - **complete *delivering* of NNAs outputs to CNAs inputs: output isomorphism**
 - ***closing* of the flows and stocks within the every NNA and within the all NNAs**
 - ***avoiding* multiple registration of flows or stocks within NNAs**

Controllability of the new national accounts (NNAs) (2/2)



Reliability of the new architecture of SNA



- **(def.) reliability means the probability, for a system, to work at the expected parameters, over an established horizon of time**
- **concerning the SNA, reliability is delivered by the simultaneous verification of the following properties of them:**
 - **correct and complete identification of the *necessities to measure* (quantify) non-economic phenomena around the CNAs (that are economic only)**
 - **what are un-measurable but need be measured, must be indirectly measured**
 - **correct and complete identification of the *causality relationship* between the CNAs and the new desired national accounts**
 - **not the correlations between NNAs and CNAs are of interest, but the causalities**
 - **correct and complete description of the *flows and stocks mechanisms inside the NNAs***
 - **NNAs must be consistent by themselves, concerning the own flows and the own stocks involved**
 - **correct and complete description of the *flows and stocks mechanisms inside the ENAs* (extended national accounts)**
 - **The ENAs must be also consistent by themselves, concerning the total flows and the total stocks involved over the whole economy/society**



Practicability of the new architecture of SNA

- **(def.) practicability means the probability, for a system, to reach its goals at the expected standards, over an established horizon of time**
- **concerning the new SNA, practicability is delivered by the simultaneously verification of the following properties of them:**
 - **official, permanent and accurate *registration* of statistical data involved**
 - in order, inter alia, to test, on long term, the general information circuit within NNAs
 - **methodological *coherence* between NNAs data and CNAs data**
 - in order to construct the input-output matrix over the ENAs
 - ***uniformity* of data system used**
 - in order to allow comparative analyses among the states
 - **ensuring the *networkingness* of the information on flows and stocks**
 - in order to cvasi-instantaneously access to any information „produced”, transfered, actualized in the SNA
 - **appropriateness of data system at the SNA level for *qualitative* (hermeneutical) *purposes* concerning the wellbeing**
 - the wellbeing measuring and assessing must be the final purpose of the new SNA

Suggestions on needed research (**FP8** - 2014-2020) in the matter of ensuring the new SNA practicability



- **(1) Methodology to pass from variables to indicators in the NNAs (environment, social progress)**
- **(2) Methodology to consistently aggregate the spatial (teritorial) indicators of NNAs (environment, social progress)**
- **(3) Methodology to consistently aggregate the dyachronic (temporal) indicators of NNAs (environment, social progress)**
- **(4) Methodology to quantify the cross-border impact of some flows in NNAs (cross-border externalities, both positive and negative)**
- **(5) Methodology to treat the „synapses” among the NNAs and the CNAs**



Expected feed backs aimed at improving the final Report

- **How could be measured the un-observable variables?**
 - **for example: the underground economy is an un-observable; quantifying the biases from a benchmark (which?) could be a solution for the national accounts?**
- **As it is well known, there is a famous paradox (Arrow, Păun) on the principled impossibility of indicators aggregation; how could be overpowered this paradox?**
 - **for example: according the utility theory, a monetary unit differently values for different individuals; how could we add these monetary units into a sum?**
- **The economic process must be analysed based on causality principles; but, in the national accounts, the measurement doesn't focus on the causality only, but also on any processual determination (causes and simple correlations)?**
 - **for example: some economic flows can be the result of the herd effect: here we have not a clearly identifiable causality, but the macro-variables involved are, however, changed**

THANK YOU
FOR
ATTENTION