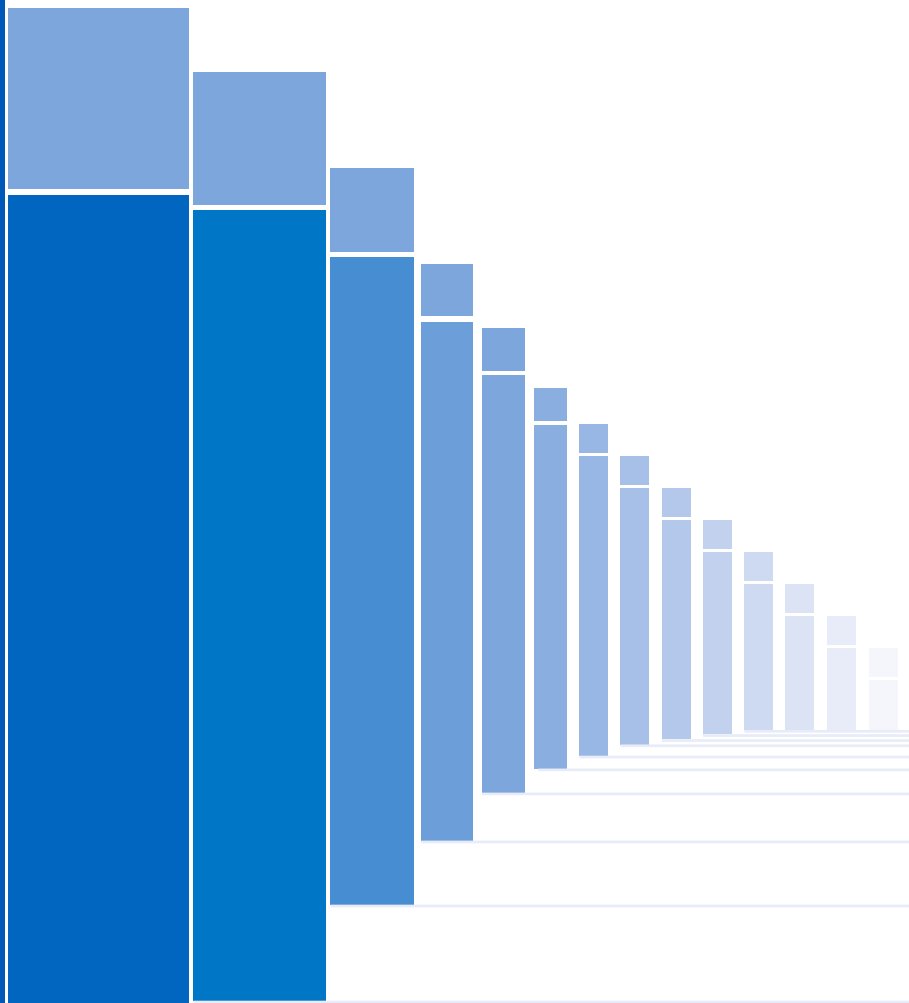


CHO

CERTIFICAT HYPOTHÉCAIRE OBEGI



2019
**IMPACT
STUDIES**

Prof. Jean Francois Goux & Dr. Samir Nasr

IMPACT STUDY #1

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Le CHO n'est pas un crédit hypothécaire, ni un titre de créance négociable (TCN). C'est une innovation financière de type instrument bancaire. Ce n'est donc pas non plus un produit de marché. Plus précisément, c'est une garantie réelle déposée auprès d'une banque; elle garantit les créanciers de cette dernière et est de ce fait comptabilisée en hors bilan de la banque. Le déposant offre une garantie hypothécaire à la banque lui permettant d'accroître sa capacité d'endettement et donc son activité (prêts et emprunts). Le dépôt est de courte durée (1 à 12 mois) et rémunéré par une commission. Une loi organise et régleme la procédure.

D'après les promoteurs du projet, cette innovation financière présenterait les avantages suivants:

- Pour l'économie:
 - Une accélération de la croissance économique
 - Une stimulation du crédit bancaire
 - Une amélioration de l'accès au financement
 - Une régularisation accrue du secteur immobilier
 - Une meilleure inclusion financière
- Pour l'Etat:
 - Une augmentation des recettes fiscales
 - Des revenus additionnels générés par le patrimoine immobilier public
 - Une amélioration de sa capacité d'emprunt
- Pour les propriétaires immobiliers:
 - Une meilleure connaissance de leur patrimoine immobilier
 - Une augmentation progressive de la valeur de ce patrimoine
 - Un revenu supplémentaire
 - Davantage de produits et services bancaires y compris un accès plus aisé au crédit
- Pour le secteur bancaire:
 - Une quasi-liquidité
 - Une forte réduction du coût des crédits hypothécaires
 - L'élargissement de la base clientèle et de la gamme de produits et services

Il n'est pas possible de tester toutes ces affirmations, que ce soit d'un point de vue micro économique ou macro économique. Parmi celles-ci, nous allons privilégier l'effet sur le crédit car c'est sans doute le plus certain. L'offre de crédit augmentera et surtout son coût diminuera. On reconnaît ici un effet quantité et un effet prix. Si l'impact sur l'offre est facile à comprendre (cf. infra), celui sur le coût mérite d'être précisé.

Le taux d'intérêt réel (r) est égal au taux nominal (i) moins le taux d'inflation (π). Ce taux d'intérêt réel se décompose en taux d'intérêt sur les actifs sans risque (r_f) et prime de risque (m).

$$r = r_f + m$$

Deux effets vont jouer: d'une part l'effet liquidité, d'autre part la réduction de la prime de risque. L'effet liquidité est un concept keynésien considérant que l'augmentation de la monnaie en circulation fait baisser le taux d'intérêt (cf. infra). Quant à la baisse de la prime de risque, c'est sans doute le principal effet attendu de la mise en place du CHO: plus de garanties donc moins de risques et une prime plus faible (voire négative). Les deux effets additionnés entraîneront donc inéluctablement une baisse des taux d'intérêt.

Nous proposons d'en vérifier ou d'en évaluer les conséquences macro économiques à l'aide de deux modèles que nous présenterons dans un premier temps et dont nous évaluerons les résultats ensuite.

Deux modèles, donc.

1) Un modèle macro-économique synoptique

Le modèle de base est un modèle synoptique permettant de repérer les principales interactions d'ordre macro économiques pour un pays donné. Il se présente sous la forme suivante (graphique 1).

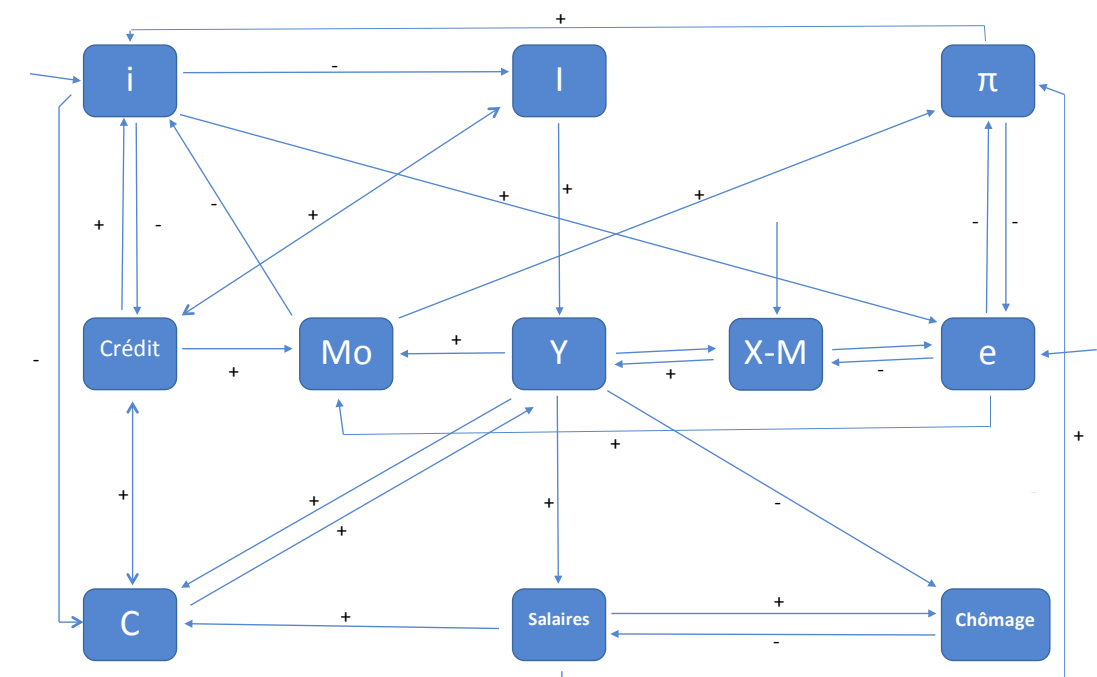
Une flèche indique une influence de même sens (+) ou de sens inverse (-). I désigne l'investissement; i un taux d'intérêt représentatif de la structure par terme des taux d'intérêts; π le taux d'inflation; M_0 la masse monétaire; Y le produit intérieur brut (PIB) ou toute autre mesure de la production annuelle nationale; e le taux de change au certain ($1 \text{ £} =$); C la consommation des ménages; $X-M$ la balance commerciale; les autres agrégats sont écrits en clair. Par exemple: une hausse du taux d'inflation (π) entraîne une hausse des taux d'intérêt (i).

On y trouve les principales relations macro économiques:

- le taux d'intérêt déterminé par la politique monétaire ou/et les anticipations d'inflation, la demande de fonds prêtables, les taux dans le reste du monde;
- l'effet liquidité
- l'investissement déterminé par les taux d'intérêt;
- l'inflation d'origine monétaire, mais aussi salariale et extérieure;
- la masse monétaire déterminée par l'activité économique, le crédit, l'extérieur;
- le taux de change par le taux d'intérêt, l'inflation, les échanges extérieurs et les mouvements de capitaux;
- une fonction de consommation;
- la relation de Phillips;
- la balance commerciale;
- l'influence du reste du monde sur les taux d'intérêt, le taux de change, la balance commerciale

Ce modèle d'inspiration néo-keynésienne sera complété par une modélisation économétrique de type «nouveau consensus macro monétaire» telle que présentée dans le chapitre 9 de notre ouvrage Macroéconomie monétaire et financière (7ème édition, Economica, Paris).

Graphique 1: un modèle synoptique de l'économie



2) un modèle Nouveau Consensus Macromonétaire

Les équations du modèle¹ sont les suivantes :

Bloc demande

$$C_t = C_0 + c(Y_t - T_t) = 0,04 + 0,7(Y_t - T_t)$$

$$I_t = I_0 - br = 0,34 - 4r$$

$$Y_t = C_t + I_t + G_0$$

$$G_0 = T_0 = 0,2$$

Bloc règle de politique monétaire

$$i_t = r^* + \pi_t + \rho(\pi_t^e - \pi_t) = 0,04 + \pi_t + 0,25(\pi_t^e - \pi_t)$$

Bloc offre

A court terme (relation de Phillips)

$$\pi_t^e = \pi_{t-1} + g(Y_{t-1} - Y_n) = \pi_{t-1} + 0,15(Y_{t-1} - Y_n)$$

A long terme (fonction de production)

$$Y_n = F(K, L_n) = 1$$

Ce modèle ne correspond à aucune économie en particulier, pas plus celle de la France que celle du Liban. C'est simplement un modèle de référence, en situation d'équilibre, par rapport auquel on peut calculer les conséquences de modifications de certains paramètres. On retrouvera à la lecture du chapitre 9 de l'ouvrage de référence cité, les fondements théoriques et les présupposés méthodologiques. Nous pouvons cependant tenter de le calibrer pour se rapprocher au mieux du cas libanais.

Les paramètres retenus sont partiellement issus du seul modèle macro économétrique disponible à ce jour décrivant l'économie libanaise, présenté dans l'article «Targeting debt in Lebanon: a structural macro-econometric model»².

Le modèle appliqué au cas libanais est le suivant :

Bloc demande

$$C_t = C_0 + c(Y_t - T_t) = 0,12 + 0,6(Y_t - T_t)$$

$$I_t = I_0 - br = 0,298 - 2r$$

$$Y_t = C_t + I_t + G_0$$

$$G_0 = T_0 = 0,21$$

Bloc pseudo règle de politique monétaire

$$i_t = r^* + \pi_t + \rho(\pi_t^e - \pi_t) = 0,05 + \pi_t + 0,05(\pi_t^e - 0,04)$$

Bloc offre

A court terme (relation de Phillips)

$$\pi_t^e = \pi_{t-1} + g(Y_{t-1} - Y_n) + S_{t-1} = \pi_{t-1} + 0,15(Y_{t-1} - Y_n)$$

A long terme (fonction de production)

$$Y_n = F(K, L_n) = 1$$

¹ Modèle de référence, en situation d'équilibre, d'après G Wells (2007), « Teaching aggregate demand and supply models », Discussion Paper, 2007-03, UTAS School of Economics and Finance, et J. F. Goux (2013) p. 311.

² Salim Araji, Vladimir Hlasny, Loyal Mansour Ichrakieh, Vito Intini, Middle East Development Journal, vol. 11, 2019, issue 1, pp. 75-104.

Parmi les différentes conséquences attendues de la mise en place du CHO, deux peuvent être testées dans ce cadre macroéconomique: l'effet prix et l'effet quantité.

1 - Effet prix (baisse des taux d'intérêt et de la structure par terme des taux d'intérêt)

La garantie supplémentaire apportée par le CHO permettra aux banques de se refinancer dans de meilleures conditions, que ce soit sur le marché interbancaire ou le marché obligataire. Elles pourront octroyer des crédits à des taux plus faibles en raison de la baisse de la prime de risque. Toute la structure par terme des taux sera donc abaissée. Il faudra cependant un certain temps pour que le financement international soit impacté étant donné la nouveauté de la procédure.

Le graphique 1 nous indique que cela induira des investissements supplémentaires (i -> I) et une consommation supplémentaire (i -> C) et par effet multiplicateur une hausse de l'activité économique (I -> Y) et (C -> Y). La baisse des taux d'intérêt pourrait entraîner, selon le modèle keynésien de la demande de monnaie, une hausse de celle-ci. Cet effet étant aujourd'hui très discuté, il est inutile de le retenir. La baisse des taux d'intérêt se traduira également, en raison des facilités de refinancement, par une offre accrue de crédits (i -> crédit) et de ce fait une consommation (crédit -> C) et un investissement (crédit -> I) plus importants, renforçant l'effet multiplicateur et la croissance économique.

Il y a cependant un risque de hausse du taux d'inflation (π), via les salaires et la réduction du chômage (relation de Phillips). Dans ce cas, on ne peut pas écarter une politique monétaire récessive, conforme à la règle de Taylor ($(\pi - i)$). Cet effet sera mieux détaillé à l'aide du modèle NCM qui suit.

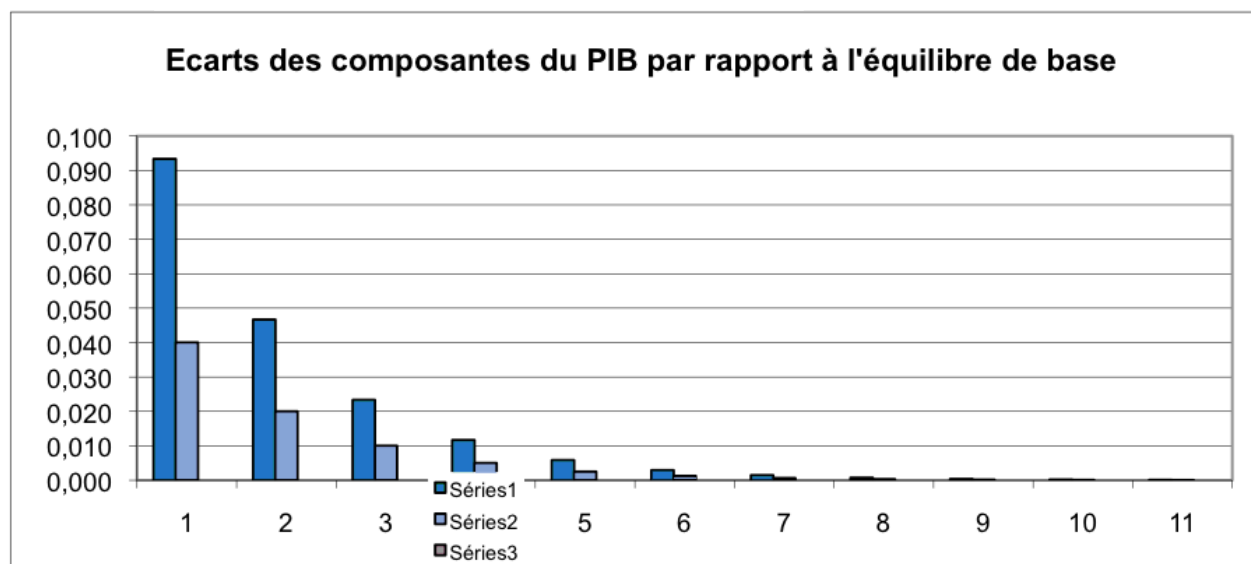
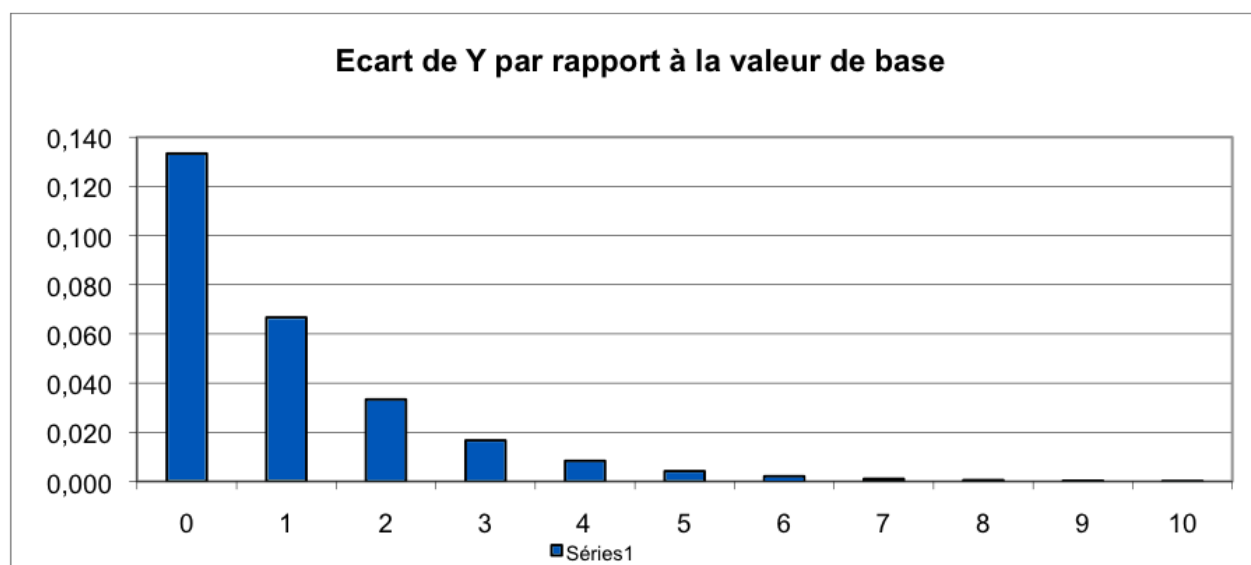
Supposons donc une baisse du taux d'intérêt sur une période longue, analysée comme un choc permanent. Le résultat, dans le cas général, illustré par les graphiques 2 et 3 est le suivant:

Lecture des graphiques: le modèle fonctionne sur 10 périodes (mois ou trimestre selon la rapidité de réaction de l'économie). Le graphique 2 indique l'évolution du PIB ou autre indicateur économique de même type, noté Y, par rapport à la situation de départ que l'on suppose équilibrée. Ce que l'on observe, ce sont les effets de période en période du choc de taux d'intérêt. L'échelle en ordonnée indique l'écart par rapport au potentiel (Y) ou à la valeur de départ à l'équilibre (C, I, G); elle ne doit pas être interprétée comme un taux de croissance annuel. La deuxième partie du graphique 2 sépare l'effet sur la consommation (en bleu) et l'investissement (en vert). Le graphique 3 correspond au même calcul en écartant la contrainte du PIB potentiel.

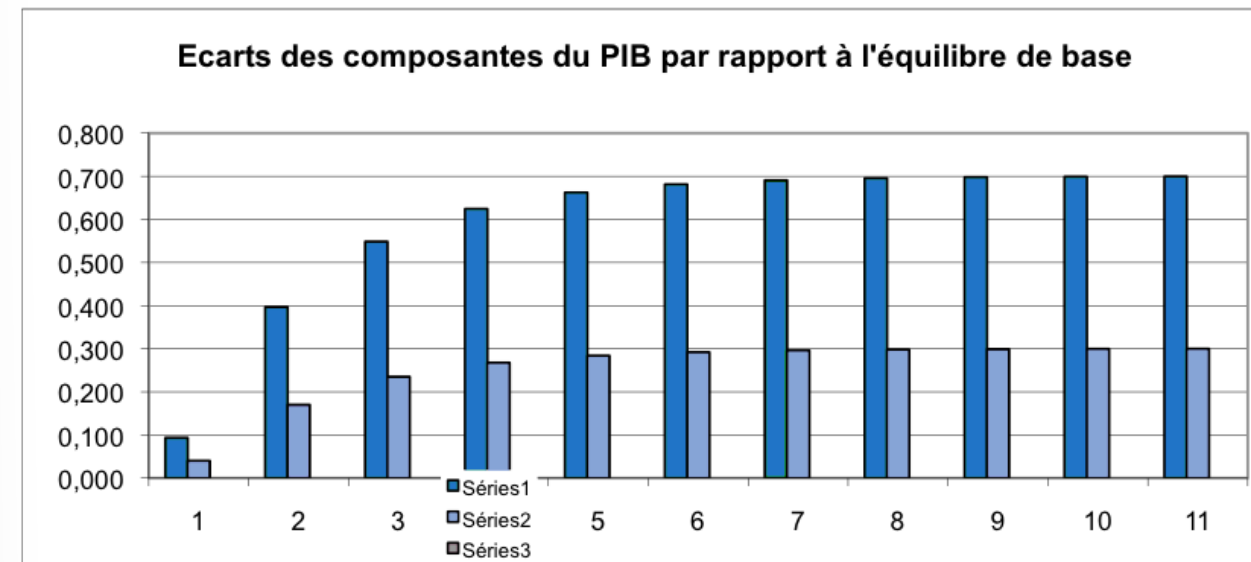
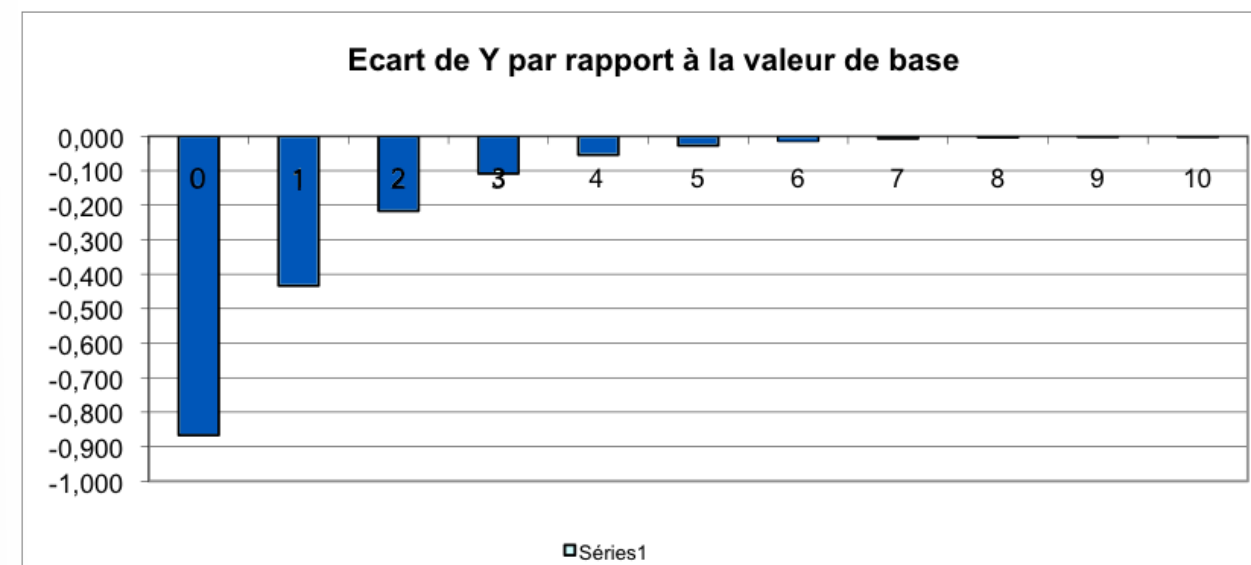
L'effet testé est une diminution permanente de 100 points de base du taux d'intérêt. L'économie est à proximité de son potentiel. Le graphique 2, correspondant à cette situation, nous montre que, comme attendu, le PIB augmente dès la première période, que ce soit en investissement (en vert sur le graphique) ou en dépenses de consommation (en bleu sur le graphique). Mais l'effet n'est pas durable et dès la deuxième période, il s'épuise. Cela est dû à l'effet de la règle de Taylor dans le cadre de la politique monétaire anti inflationniste.

Une alternative est testée, où le PIB est en dessous de son potentiel (graphique3); cela revient à considérer que l'économie est en dessous de sa capacité de production. Au point de départ, l'écart est fortement négatif, indiquant une situation de sous production. Suite au choc de taux, cet écart se réduit et finalement disparaît. Dans ce cas, l'effet est pérenne et se stabilise lorsque le potentiel est atteint.

Graphique 2: les conséquences sur l'activité économique d'une baisse du taux d'intérêt

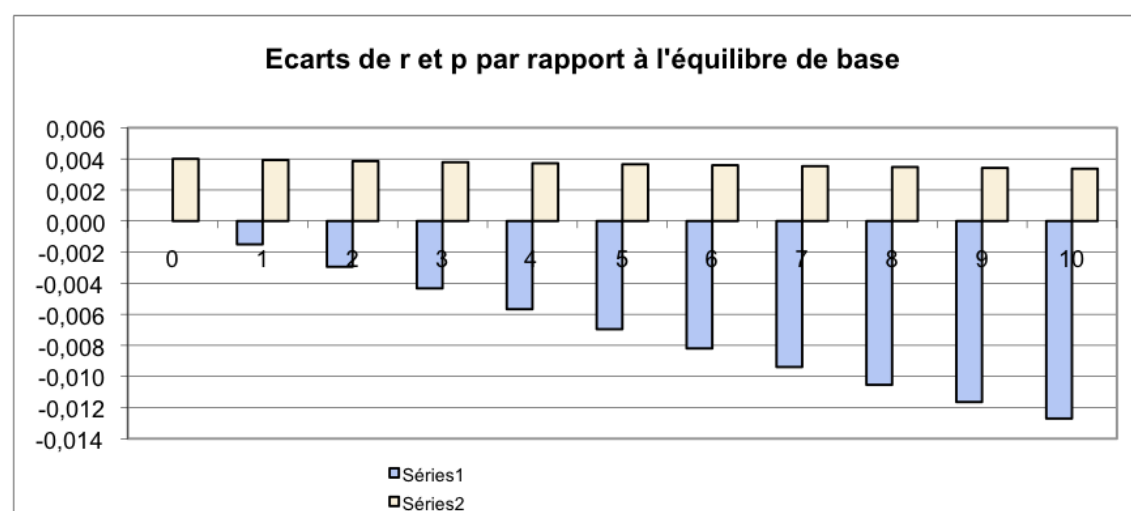
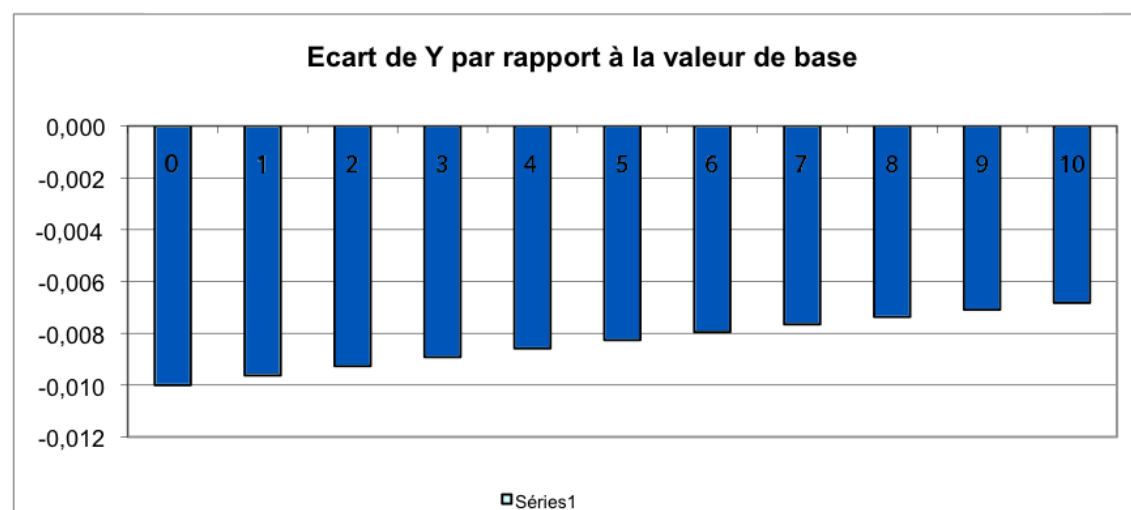
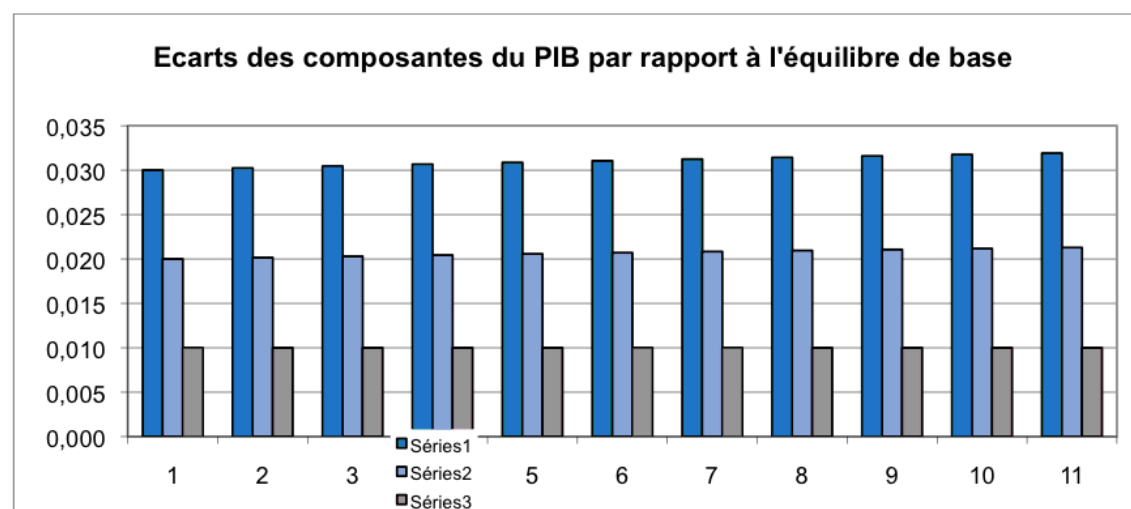


Graphique 3: les conséquences sur le PIB d'une baisse du taux d'intérêt avec hausse du PIB potentiel



Dans le cas plus précis du Liban, où la production est en dessous du niveau potentiel, il y a une marge de progression de l'activité économique. Le graphique 4 met en évidence une hausse pérenne de l'investissement, de la consommation et des dépenses gouvernementales, suite au choc permanent de taux d'intérêt. L'activité économique rejoint progressivement son niveau potentiel, sans hausse ni du taux d'intérêt, ni du taux d'inflation. La progression semble relativement lente. Comme dans le cas général, une fois le niveau potentiel atteint, l'effet s'atténuera puis disparaîtra. Néanmoins, comme nous avons supposé une politique monétaire permissive, le niveau potentiel pourra être dépassé, mais au prix d'une légère inflation. Une politique de l'offre s'imposera alors.

Graphique 4: les conséquences sur l'activité économique libanaise d'une baisse du taux d'intérêt



2 - Effet quantité (hausse des crédits disponibles)

Il convient de distinguer deux cas, soit l'économie ne manque pas de crédit disponible, soit l'économie est contrainte par l'indisponibilité du crédit.

A – en situation d'aisance du crédit

Il est évident que dans une telle situation, des mesures en faveur du crédit sont inopérantes. Seule l'augmentation du PIB potentiel grâce à une politique de l'offre sera efficace. Tout se passe comme si, dans le graphique 1, les flèches partant de la case crédit n'existaient pas. On notera, cependant, que les garanties sont de meilleure qualité grâce au CHO et que l'effet prix demeurera.

B – en situation de credit squeeze (credit crunch)

Dans ce cas, l'économie est contrainte par le crédit. Si celui-ci augmente suite à la mise en place du CHO, l'investissement et la consommation augmenteront (crédit \rightarrow I) (crédit \rightarrow C), puis le PIB et plus généralement l'activité économique (Y). La masse monétaire augmentera également puisque le crédit en est une contrepartie importante. Mais, que ce soit à cause de la surchauffe économique ou de la croissance monétaire, le risque d'inflation n'est pas à négliger, conformément à ce que nous avons déjà développé, même s'il est faible dans le cas du Liban.

Conclusion générale

La mise en place du CHO aura des effets positifs sur l'économie libanaise. D'un point de vue macroéconomique, on peut en attendre une croissance durable de l'activité économique. Si l'on considère que l'économie est en dessous de son potentiel, cela permettra de le rejoindre sans risque inflationniste. Il est cependant difficile d'en préciser le rythme.



IMPACT STUDY #2

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CHO OVERVIEW

- The CHO Instrument
- Structure
- Beneficiaries

Definition

- The term CHO stands for Certificat Hypothecaire Obegi in French.
- It is a banking instrument that allows real estate owners to increase their revenues and contribute to their country's economic growth.

How does it work?

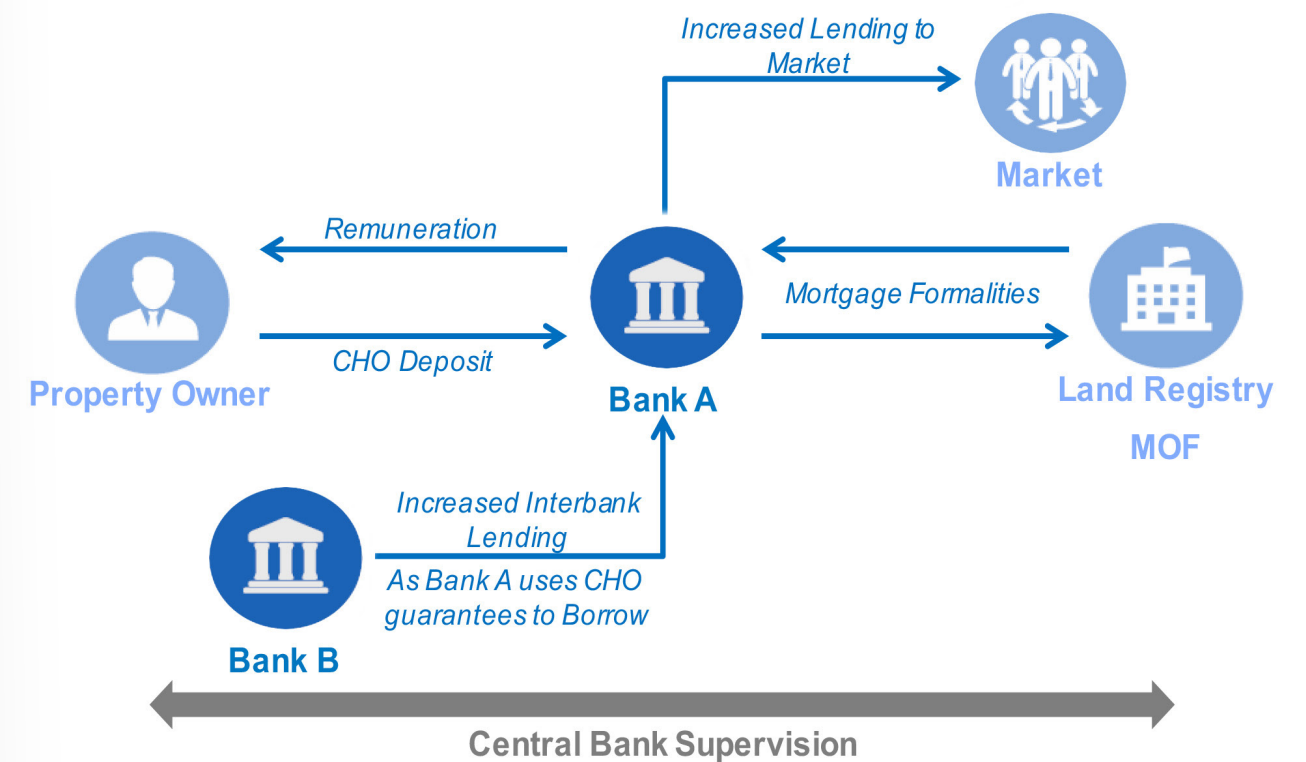
- The CHO is a banking instrument that allows real estate owners to deposit a real estate guarantee in a bank for a duration of up to one year.
- The Real Estate Owner can also provide this guarantee for a third party borrower if he wishes to do so.
- In return, the real estate owner is offered a remuneration from the bank against the guarantee provided.
- The bank uses this guarantee as collateral in order to enhance its borrowing capabilities, its financial standing, and therefore increase its lending capacity in the local market.

Rationale behind CHO

- Capitalizing on dormant real estate to:
 1. Benefit owners of dormant real estate.
 2. Benefit banking sector.
 3. Boost economic growth.
- Creating a standard of real estate valuation across Lebanon.
- Improving information on real estate assets across Lebanon.

The Structure

- The operational structure of the CHO will require one or several independent agencies that will conduct the necessary due diligence on the properties, evaluate them annually and issue standard evaluations, against a fee paid by the depositary banks.
- The independent agencies are a key component for the proper functioning of the mechanism. In addition, they will provide all stakeholders (real estate owners, State, banks, etc.) with valuable information that is presently disseminated, by using a Real Estate Assets Management and Valuation software specifically designed for this purpose.
- Another key component for the proper functioning of the mechanism is the CHO Draft Law. A specific law needs to be put in place for the CHO to be incorporated and used in the banking system. The Draft Law is ready and was submitted to the newly elected Parliament on October 1st 2018.



Beneficiaries

The CHO is expected to directly benefit real estate owners, banks, and credit seekers.



Real Estate Owners

- Financial inclusion through real estate assets
- Additional income generated from dormant real estate
- Improved information on real estate assets



Banks

- Improved liquidity management through CHO collateral
- Improved banking soundness due to additional guarantees
- Increased lending capacity
- Wider customer base
- Boosted banking activity through additional products and services
- Reduced overall cost of capital.



Entrepreneurs

- Improved access to financing or
- Lower interest rate on bank borrowings

ECONOMIC IMPACT

- Economic Activity
- Impacted Sectors
- Economic Base
- Inflation

The introduction of the CHO is expected to boost economic activity through increased investments and consumption.

- CHO certificates deposited by real estate owners will increase the ability of commercial banks to improve their borrowing capacities.
- As a result, commercial banks could be able to supply larger amounts of capital to the local market which would increase investments in various sectors of the economy.
- Additionally, real estate owners who are depositing their certificates will receive additional income. These flows will be rechanneled into the economy and therefore increase consumption in the medium to long term.
- Therefore, the introduction of the CHO is expected to boost economic activity in the short-term through increased investments, and in the medium to long term through increased consumption.
- In other words, the CHO consists in setting up a mechanism to utilize the country's real estate assets (a large part of which would otherwise be dormant) in order to boost economic activity in the short, medium, and long term.

In the short term...



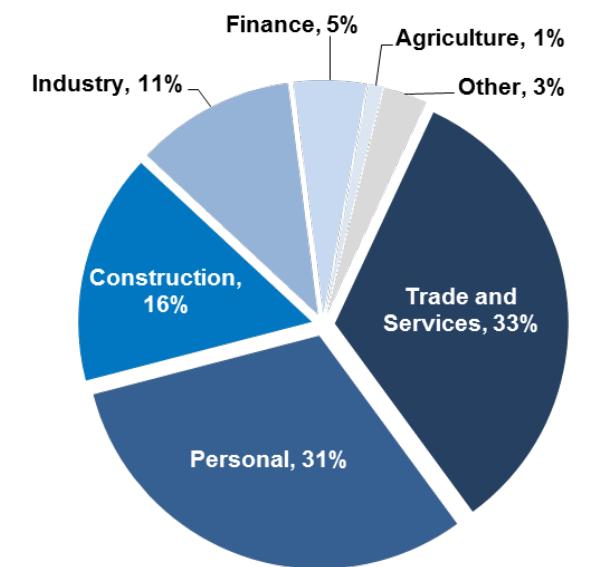
In the medium/long term...



Trades and services, housing, and industry are expected to be the three main recipients of additional credit that could possibly be made available by the CHO instrument.

- According to Bank Byblos, total private sector credit amounted to 59.4\$ billion in 2018.
- The trade and services sector was the largest recipient of financing by commercial banks, accounting for %33 of total private sector credit.
- The second largest share of private sector credit corresponded to personal loans (%31), followed by construction (%16), and industry (%11).
- It should be noted, however, that housing loans by the public sector amounted to 13\$ billion during the first three quarters of 2018 (source: BLOM Invest)
- The possible increase in lending that would result from the introduction of the CHO instrument could impact entrepreneurs and companies (whether startups or existing companies seeking credit) operating in various sectors.
- The housing sector may be an important recipient of additional credit that could be made available by the CHO instrument, especially in the case of a continued decrease of necessary subsidies.
- The industrial sector is another important recipient of credit that could be made available by the CHO instrument. Growth in the industrial sector is crucial as it is expected to promote exports, reduce the trade deficit, and improve economic resilience against shocks and stresses.

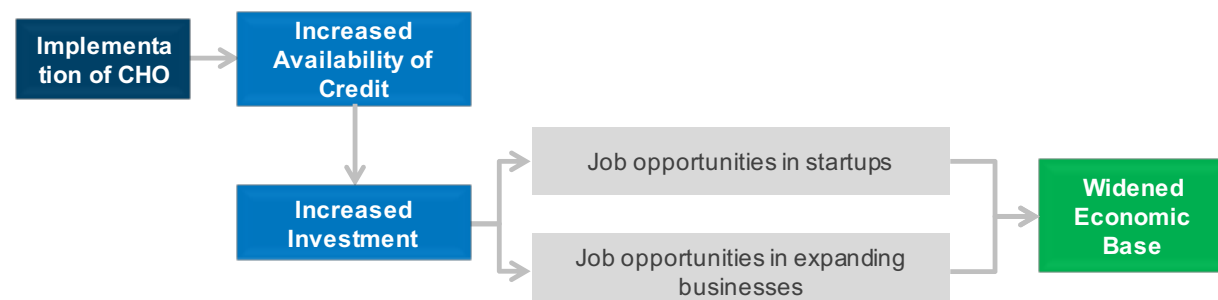
Lebanon Private Sector Credit 2018



Source: BLOM Invest

The CHO instrument is expected to widen the Lebanese economic base by creating job opportunities in startups and businesses undergoing expansion.

- Unemployment is a major challenge in Lebanon (especially among youth) due to the economic slowdown which is limiting the number of job opportunities available.
- According to ILO estimates, around %6.7 of the Lebanese labor force is currently unemployed.
- The additional credit that could be made available by the CHO instrument is expected to increase investment in various sectors of the Lebanese economy.
- This is due to the fact that promoters have a deep conviction to incubate and expand new ventures since it is an important driver towards ensuring that their businesses can grow and be sustainable.
- The reluctance of some banks to provide additional facilities might be justified by increasing risks, especially if it is outside the scope of Circular 331 that is ensuring equity participation within a certain framework and rule set with a certain final guarantee by BDL.
- This reluctance might be relieved by an additional guarantee that would justify and support the additional injection of liquidity into the startup, at least for a limited period, and for a specific purpose complementing the promoters' engagement and other types of financial contributions.
- Therefore, the newly available credit could be sought by entrepreneurs in order to complement the financing of startups during a certain period of time.
- This would lead to the widening of the Lebanese economic base since both startups and expanding businesses will create new job opportunities regardless of the sector into which the investments flow.



The implementation of the CHO instrument is expected to entail minimal to no inflationary pressures on the Lebanese economy.

- The implementation of the CHO instrument is expected to boost economic activity through increased investments and consumption.
- However, this is expected to have no effect on inflation since:
 1. Investment projects in Lebanon are relatively limited in the current environment. Therefore, any increase in investments will most likely be absorbed by the economy without applying any inflationary pressures.
 2. The additional income generated by the CHO instrument will lead to a relatively small improvement in purchasing power for consumers; the additional income generated by the CHO will serve as a secondary income source for the depositor rather than a source capable of generating wealth. Therefore, any increase in consumption resulting from the implementation of the CHO instrument will be minimal relative to total consumption, and is thus expected to have no effect on inflation.
- Furthermore, from a banking perspective, it should be noted that any increase in the liquidity of banks could lead to a rise in inflation rates.
- However, the CHO does not aim to alter the liquidity position of a bank, but rather to improve its liquidity management and strengthen its overall soundness. Therefore, there is also no risk of inflationary pressure even from a banking perspective.
- In the highly unlikely case that the implementation of the CHO could cause investments or consumption to spiral out of control, it should be remembered that the banking activity is under the supervision of the Central Bank, and therefore, policies will be evaluated in order to regulate the amount of guarantees that can be deposited as well as the potential amount of additional credit that can be supplied.

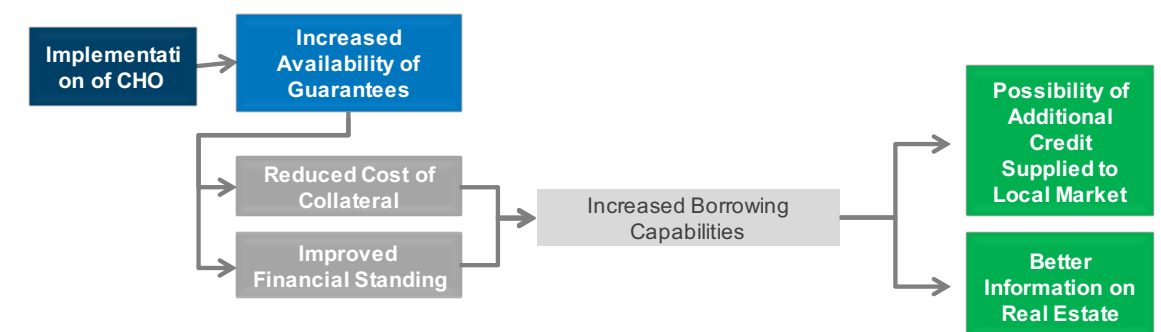
IMPACT ON BANKING SECTOR

- Borrowing Capacity
- Provisioning
- Interbank Market
- IFRS
- Balance Sheets
- Ratios

Borrowing Capacity

The CHO instrument could increase the availability of credit supplied to the local market as a result of an improvement of the financial standing of commercial banks.

- Guarantees play an important role in debt contracts since they serve as a reliable protection of the lending party from financial losses.
- The return on the CHO instrument will incentivize real estate owners to deposit their real estate certificates at commercial banks which will increase the amount of guarantees that these banks possess.
- An increase in the amount of guarantees that a commercial bank possesses could:
 1. Reduce the cost of collateral for commercial banks.
 2. Improve reliability and soundness of commercial banks which would help them negotiate better conditions.
 3. Optimize allocation of financial resources.
- CHO deposits are a general guarantee in favor of all creditors of the bank.
- The possibility by depositary banks to give preference on the pool of CHO's will facilitate getting additional funds from other financial institutions.
- This will lead to improved financial standing and easier access to credit by commercial banks, which will boost their lending to the local market.
- Additionally, the resulting improvement in real estate information will mitigate the cost of lending by commercial banks.



The implementation of the CHO instrument might have an effect on provisioning of commercial banks as well as on the interbank lending market.

- Banks and lending institutions are required to carry enough capital to offset all types of risks, including credit risk.
- This is met by a balance sheet entry indicating an allowance for bad debts or a general provision. The reserve funds provide backup capital for risky loans that may default. Additionally, an allowance for bad debts is made to offset potential credit losses.
- The implementation of the CHO instrument might have an effect on bank provisioning:
 1. For institutions that are lending in the interbank market and benefiting from CHO guarantees, provisioning is expected to be lower as credit risk is mitigated by such guarantees.
 2. In fact, according to IFRS 9, institutions have to record a “collective provision” entry when lending, which amounts to the borrower’s expected loss provided by the probability of default multiplied by the loss given default which is reported by regulators. Loans provided by banks and secured by CHO guarantees have lower expected loss compared to unsecured loans; therefore they require a lower “collective provision”.
 3. For borrowing banks however, the nominal value of provisions would increase under the assumption that these banks would be supplying a higher volume of credit to the local market.
- Therefore, after the implementation of the CHO instrument, provisioning at lending institutions in the interbank market might decrease, while provisioning at local commercial banks might increase.

The lack of lending in the Lebanese interbank market is seen as a challenge to the implementation of the CHO instrument.

- Currently, the Lebanese interbank market is relatively small with its size estimated at around 300\$ million.
- Borrowing in the Lebanese interbank market is limited due to the fact that the decision to lend is usually made by the lender (rather than the borrower) as a result of their liquidity position at the time.
- Therefore, an increase in guarantees for borrowers will not necessarily stimulate an increase in lending in the Lebanese interbank market, as long as lenders do not have excess liquidity.
- The CHO instrument relies on increasing the borrowing capacity of commercial banks in an attempt to either supply additional credit to the local market or reduce the credit rates of loans.
- Therefore, the lack of lending in the interbank market is seen as a challenge to the implementation of the CHO instrument.
- One option for commercial banks who have adopted the CHO instrument is to use the guarantees to secure funding from international institutions.
- However, it should be noted that international lenders may require a higher amount of collateral due to sovereign risk.
- This should not be an issue for local banks since they are expected to have an excessive amount of guarantees.
- However, it should be noted that international borrowings could end up being over collateralized compared to local borrowings.

Ratios

The implementation of the CHO instrument is expected to have an effect on both liquidity and profitability ratios.

- The most important ratios when assessing a bank's performance are those that pertain to liquidity, profitability, and solvency:
 1. Liquidity ratios are used to determine a debtor's ability to pay off current debt obligations; Current liabilities are analyzed in relation to liquid assets in order to evaluate the coverage of short-term debts.
 2. Profitability ratios are used to assess a business's ability to generate profits in relation to its overall resources.
 3. Solvency ratios measure a company's ability to meet its long-term financial obligations. This is done by comparing a company's level of debt against earnings, assets, and equity.
- The implementation of the CHO instrument is expected to have an effect on both liquidity and profitability ratios. However, whether this effect is positive or negative depends on the bank's ability to generate enough cash-flow on reinvestments of borrowings to cover the fees paid to real estate owners who have deposited their assets as guarantees at the bank.
- The implementation of the CHO instrument is expected to have no effect on solvency ratios (mainly because asset deposits by real estate owners will be recorded off-balance sheet) but could have a positive impact on the economic capital of banks.
- Therefore, the implementation of the CHO instrument is expected to have no significant impact on the banks' balance sheets.

SOCIAL IMPACT

- Financial Inclusion
- Regularization of Real Estate Assets

The CHO instrument will improve financial inclusion by offering a new financial product that is available to owners of real estate assets, regardless of whether they are bankable.

- The CHO instrument is expected to improve the lending capacity of banks through an increase in the guarantees that they can provide.
- This could provide more access to credit for individuals, households, entrepreneurs, and businesses.
- Additionally, households of any income level will have the option to make use of a new financial product offered by several commercial banks, as long as they own a real estate asset that fits the eligibility criteria.
- Therefore, the CHO instrument will improve financial inclusion by offering a new financial product that is available to owners of real estate assets, regardless of whether or not they are bankable.
- This is important since many Lebanese citizens actually own real estate assets but make no use of them. They prefer to hold on to their dormant assets as they believe that their value is only increasing with time.
- It is important to note that the total value of real estate in Lebanon is estimated at around 16 times GDP or 830\$ billion. The dormancy of a significant portion of these assets is seen as an under-utilized resource which could otherwise contribute to economic growth.
- With the implementation of the CHO, a large number of real estate owners will be able to make use of their dormant assets to receive an additional income stream, which will improve their purchasing power.
- This additional income will be redirected to different channels of the economy which will increase consumption and drive economic activity.

Country	Est. Value of Real Estate (\$ billions)	GDP (\$ billions)	Real Estate/GDP
France	12,513	2,583	4.8
Lebanon	830	52	16.0

It is important to note that the value of real estate shown for France in the adjacent table represents residential real estate only. Nevertheless, it is estimated that the value of real estate for most countries usually falls between 10 and 20 times the value of GDP.

Source: Risque et Credit, le certificat hypothécaire.

The implementation of the CHO instrument is expected to benefit several actors across the real estate value chain by improving transparency and information in the sector.

- One of the biggest challenges facing the real estate sector in Lebanon is the lack of information regarding the availability and pricing of assets.
- As a result, many actors along the real estate value chain (whether buyers, sellers, developers, etc...) have to base their decision-making purely on anecdotal evidence rather than accurate data.
- The implementation of the CHO instrument and the cooperation of valuers with the Land Registry will create an additional source of information relating to the availability, value, status, and distribution of real estate assets across different regions.
- This is expected to provide buyers and sellers with more concrete information on the value of real estate assets relative to their location and type.
- Furthermore, the improved information in the sector will provide real estate owners with clear and quantifiable opportunities at hand with regard to their real estate assets.
- The information will also assist real estate developers, as well as startups and existing businesses, in improving their cost-control and planning.

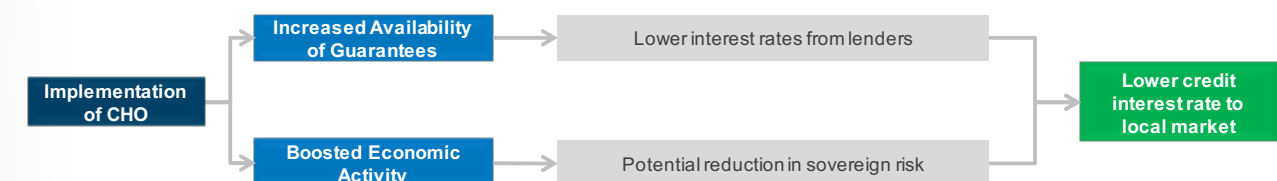
FINANCING THE ECONOMY

Credit Interest Rates

Credit Interest Rates

The CHO instrument could potentially lower interest rates offered by commercial banks to the local market.

- A study by the International Monetary Fund revealed that global benchmark interest rates are an important element in the determination of interest rates in Lebanon.
- The study confirmed that there is a substantial pass-through of international interest rates to Eurobonds and domestic dollar deposit rates.
- The study also shows that interest rates in Lebanon are affected by liquidity conditions as well as perceived sovereign risk.
- The implementation of the CHO instrument will provide commercial banks with a higher availability of guarantees which will partially mitigate risks from the point of view of lenders.
- In other words, Lebanese banks will have better chances of securing lower interest rates from loans in the interbank market.
- Additionally, the CHO instrument is expected to boost economic activity in Lebanon which could play a role in reducing sovereign risk.
- Therefore, the CHO instrument could potentially lower interest rates offered by commercial banks to the local market.



FISCAL IMPACT

Government Revenues

Government Revenues

The implementation of the CHO instrument might possibly entail a trade-off for government revenues.

- The implementation of the CHO instrument will affect government revenues in two ways:
 1. If CHO certificates are considered as deposits, then the government will earn recurring revenues amounting to %10 of the fees paid to real estate owners against CHO deposits.
 2. The government will earn increasing revenues from taxes as a result of improving economic activity driven by increasing consumption and investments.
- However, according to our estimates, the government currently earns an estimated 20\$ million per year in fees against guarantees offered to commercial banks.
- The implementation of the CHO instrument could shift a number of these offered guarantees into CHO deposits. In such a case, fees earned by the government from guarantees offered to commercial banks could decrease slightly. However, it should be noted that the purpose of each of these deposits is arguably different, and presently there are no short-term mortgages and very few third party mortgages; therefore government revenues might not witness a decrease at all.
- Nevertheless, a new revenue stream will be coming into place, namely, the %10 earning on fees paid to real estate owners against the CHO deposits.
- Therefore, the implementation of the CHO instrument could entail a sort of trade-off for government revenues, whereby the government will forgo a small share of revenues earned against guarantees offered to commercial banks in exchange for a fee earned against CHO deposits. This might not be the case, but market dynamics might lead to such a repositioning.
- Assuming the trade-off did occur, the net result on government revenues will depend on the number of CHO assets deposited upon the implementation of the instrument.
- However, since demand for the CHO instrument from real estate owners is forecasted to be extensive, it is expected that the trade-off will result in an increase in government revenues.

REAL ESTATE IMPACT

- Transparency
- Real Estate Prices

Transparency

The implementation of the CHO instrument may lead to the creation of a new standardized method of valuating real estate assets which is expected to serve as a benchmark.

- One of the biggest problems facing the Lebanese real estate market is the absence of an official price index which shows prices per square meter or transaction prices in given areas.
- House Pricing Indexes (or HPIs) play an important role in the economy as they provide a key factor in the decision making process for property owners, developers, contractors, real estate investors, real estate agents, government authorities, suppliers and manufacturers of building products, housing loan providers, etc...
- The absence of an official HPI in Lebanon might create a speculative bubble whereby real estate asset prices are fueled by speculation as opposed to fundamentals of asset classes.
- A speculative bubble is usually caused by exaggerated expectations of future growth, price inflations, or other events that could cause an increase in asset values.
- This speculation and the resulting activity drives trading volumes higher and heightens expectations, which pushes prices beyond intrinsic values.
- The implementation of the CHO instrument and the involvement of valuers in the appraisal process may lead to the creation of a new standardized method of valuating real estate assets which is expected to serve as a sort of House Pricing Index for the Lebanese real estate sector.
- The implementation of the CHO instrument may improve transparency and reduce asset price speculation in the real estate sector since assets will be appraised by valuers.
- This will provide consumers, property owners, developers, investors, and operators in the real estate sector with better information regarding the intrinsic values of assets which will play a key role in the decision making behind any real estate transaction.
- The shift from speculative asking prices to the actual intrinsic values of assets is expected to decrease asset inflation, and, therefore, increase demand in the sector.

Real Estate Prices

The implementation of the CHO instrument and the involvement of valuers may lead to more realistic asset valuations by shifting the basis of asset valuation away from speculation and more towards intrinsic values.

- Real estate in Lebanon is an important component for individuals and entities to engage with bank through loans and facilities, since real estate assets are crucial variables that determine credit worthiness and negotiating capacity.
- As a result, Lebanese real estate owners tend to over-valuate their real estate assets in order to:
 1. Increase the perception of their own wealth for positioning their commercial margin of maneuver.
 2. Inflate their financial leveraging capacity as a counterpart to obtaining credit and facilities.
 3. Improve their virtual purchasing power by over-estimating their assets.
- The over-valuation of these assets is partially tamed by three actors:
 1. The banks: Banks tend to lower the valuation of real estate assets to decrease the owner's self-perception of wealth and financial leveraging in order to reduce potential lending risks.
 2. The economy: Economic fluctuations affect the purchasing power of economic actors and thus impact the latter's ability to acquire over-valued real estate assets.
 3. Market forces: Market forces reflect the balance of power between buyers and sellers. More often, and especially when the market is experiencing a downturn, buyers firmly counterbalance any exaggeration in asset valuations, thus sharply affecting the requested prices of sellers.
- The implementation of the CHO instrument and the involvement of valuers in the appraisal process may lead to more realistic valuations of assets which conform with the current economic and financial environment by shifting the basis of asset valuation away from speculation and more towards intrinsic values.



**CONSOLIDATED
IMPACT**

Consolidated Impact

- Assuming that the increase in the availability of guarantees provided by the CHO instrument will lead to a larger supply of credit to the local market, the implementation of the CHO instrument is expected to:
 1. Boost economic activity through increased investments and consumption.
 2. Assist in the narrowing of the Lebanese credit gap created by the excessive demand for loans by individuals, households, entrepreneurs, and businesses.
 3. Enlarge the Lebanese economic base by creating job opportunities in new startups and expanding businesses.
 4. Improve liquidity management and profitability ratios of banks depending on the latter's ability to generate enough cash-flow on reinvestments of borrowings to cover the fees paid to real estate owners.
 5. Improve financial inclusion by offering a new financial product that is available to owners of real estate assets.
 6. Potentially lower interest rates offered by commercial banks to the local market.
 7. Potentially increase government revenues through boosted economic activity.
- Additionally, the implementation of the CHO instrument and the involvement of valuers in the appraisal process may:
 1. Lower the currently inflated prices, should a new standardized method of valuating real estate assets be implemented.
 2. Benefit several actors across the real estate value chain by improving transparency and information in the sector.
- However, borrowing in the Lebanese interbank market is limited and an increase in guarantees for borrowers will not necessarily stimulate an increase in lending in the Lebanese interbank market.
- This poses an important challenge for commercial banks which will adopt the CHO instrument, as they might have to turn to international lenders in order to secure additional funding.
- If the implementation of the CHO instrument does not entail an increase in credit supplied to the local market, it might prove to be less attractive for banks, as well as for the economy.
- For the economy, the implementation of the CHO instrument would therefore:
 1. Boost economic activity through improving purchasing power of CHO users.
 2. Improve financial inclusion by offering a new financial product that is available to owners of real estate assets.
 3. Potentially increase government revenues through boosted economic activity.
- In addition, if commercial banks are unable to use the deposits as guarantees to secure additional financing, then the usage of these guarantees to recover the fees paid to CHO users becomes limited to three methods, as shown below.

Peer to Peer

Commercial banks can use the guarantees as collateral against some facilities or short-term loan requests. The process will be facilitated compared to the current situation due to the increased information and transparency offered by valuers.

Financial Inclusion

Commercial banks can benefit from the increased financial inclusion to lure new clients into the bank, and potentially recover the fees paid to the CHO user through selling banking products and services to new clients.

Cross-Selling

Commercial banks can use the CHO instrument as a marketing tool with their current clients in order to improve client loyalty and increase cross-selling of complementary banking products and services.

ANNEX

- Feedback of Banks
- Consolidated Challenges
- Modeling Case

The major concern of banks is how to make use of the deposited assets to turn a profit on the fees that they will be paying the real estate owners.

- Banks regard the CHO instrument as an interesting concept as they agree that it will have an important economic impact on widening financial inclusion and making use of dormant real estate to improve the purchasing power of real estate owners and drive consumption.
- Banks believe that the CHO instrument will be in demand from both low income real estate owners who want to make use of their dormant assets to earn an additional income stream, as well as high worth real estate owners who might have assets such as buildings that are currently not being used but are being taxed.
- However, the major concern of banks is how to make use of the deposited assets to turn a profit on the fees that they will be paying to real estate owners.
- On the one hand, banks believe that wider financial inclusion would improve client loyalty and increase cross-selling of complementary banking products and services.
- On the other hand, banks know that in order for the CHO instrument to be financially interesting for them, they would have to be able to recover the fees paid to real estate owners by using the guarantees to borrow at a lower rate.
- However, banks are concerned that the interbank market in Lebanon is too small, and that lending activity among local commercial banks is sluggish.
- Banks believe that they would have to look for solutions outside the interbank market to turn a profit from the CHO instrument. This includes looking at international banks and funding institutions for loans against the guarantees provided by the CHO instrument. This way local commercial banks would be funding liquidity from foreign institutions.

General Challenges

- The CHO depositor is taking a risk when depositing his real estate asset at a bank. This is due to the fact that, in case the bank goes bankrupt, the CHO depositor could lose his asset.
- CHO depositors can only deposit their assets for a duration of up to one year. This limits the instrument's capabilities in securing financing for long-term facilities. However, the CHO could have a revolving aspect which could be used for long-term facilities.
- The interbank market in Lebanon is limited and an increase in guarantees for borrowers may not stimulate an increase in lending in the Lebanese interbank market.

Challenges in case CHO instrument does lead to an increase in credit supplied

- In the unlikely event that the CHO leads to a rapid increase in supplied capital, this could lead to a deterioration of loan quality through excessive risk-taking due to the vast amount of new loans extended, which could lead to a decrease in the soundness of the Lebanese banking system.
- Policies that aim to regulate the amount of capital supplied to the local market will be mandatory in order to avoid or at least mitigate any inflationary pressures and ensure that any increase in the availability of credit in the market serves to improve economic activity by increasing domestic investment and consumption.

Challenges in case CHO instrument does not lead to an increase in credit supplied

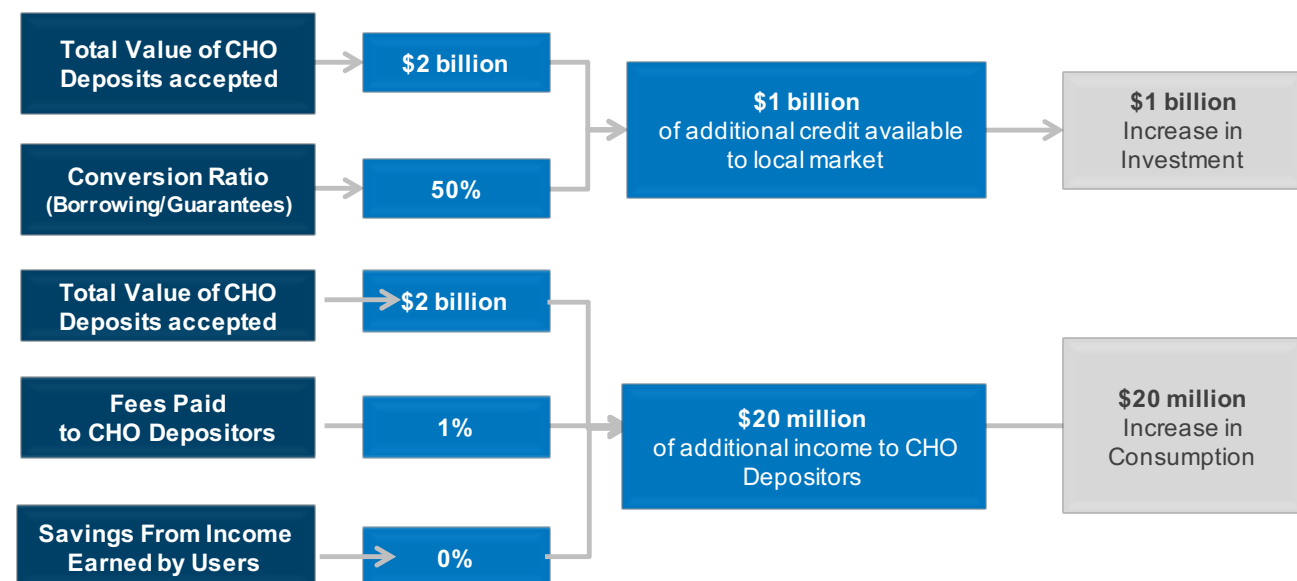
- If the implementation of the CHO instrument does not entail an increase in credit supplied to the local market, it might prove to be less attractive for banks, as well as for the economy.
- If banks are unable to use the deposits as guarantees to secure additional financing, then the usage of these guarantees to recover the fees paid to CHO users becomes limited.
- In this case, banks might have to turn to international lenders in order to secure additional credit for the local market.

Modeling Case

Based on the assumptions below, investment would increase by up to 1\$ billion, and consumption would increase by up to 20\$ million.

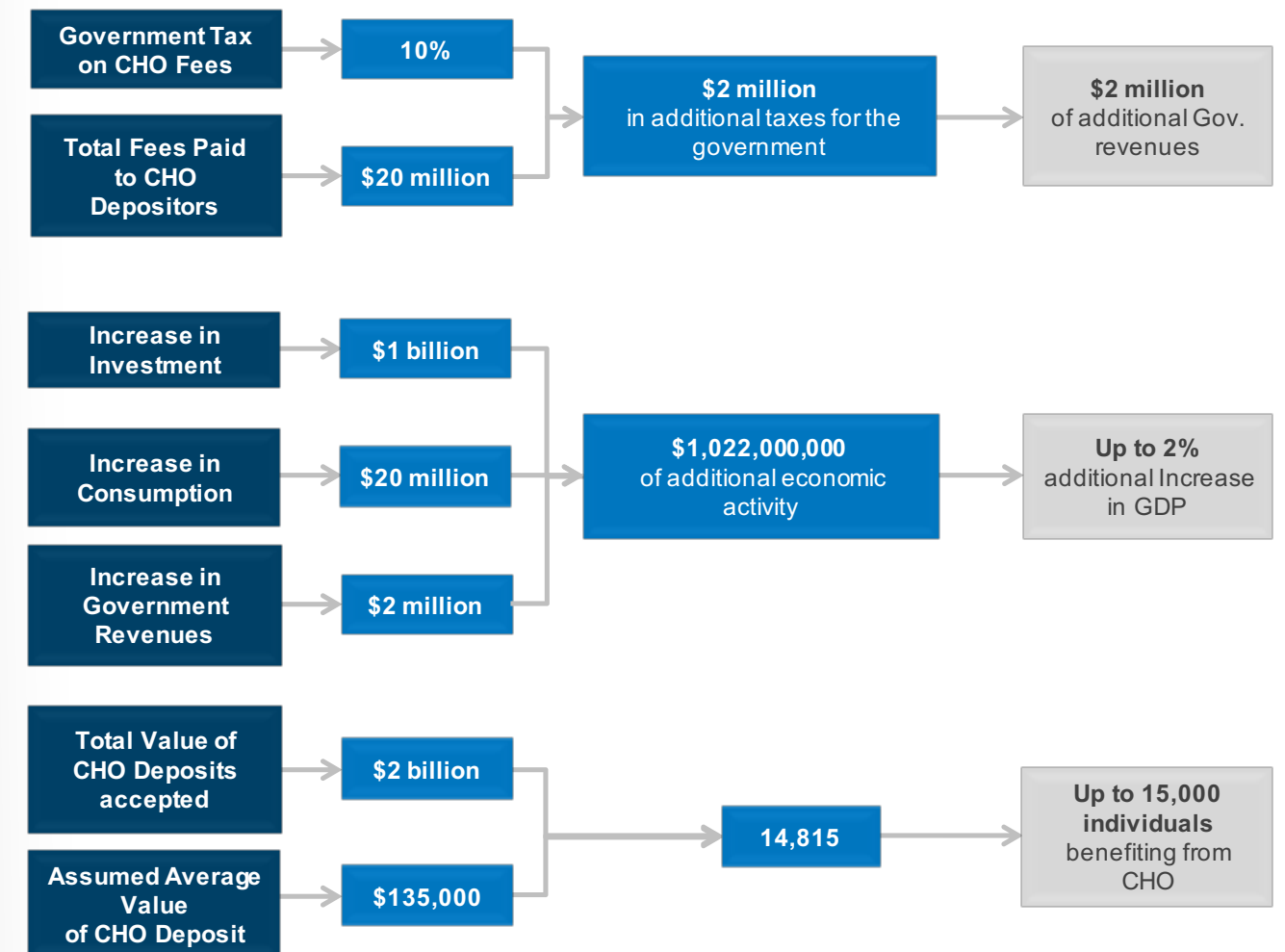
- In order to estimate the potential impact of the CHO instrument on economic activity and financial inclusion, several assumptions have to be made.
- The main assumption, which supposes a 2\$ billion total value of CHO deposits yearly, is based on a conservative hypothesis that around %0.25 of the country's total real estate value will be accepted as deposits yearly.

Item	Assumption
Total value of CHO deposits accepted yearly	\$ 2,000,000,000
Average value of CHO deposit	\$ 135,000
Fees paid to CHO users	1%
Savings from additional income earned by CHO users	0%
Government taxes on fees paid to CHO users	10%
Conversion ratio of CHOs to additional lending	50%



Modeling Case

Based on the aforementioned assumptions, GDP would increase by up to %2, and up to 15,000 individuals could be able to benefit from the CHO instrument.



Modeling Case (Sensitivity)

The table below highlights expected GDP growth in four different scenarios where the total value of CHO deposits accepted is modified.

- The table below highlights expected GDP growth resulting from the implementation of the CHO in four different scenarios.
- The sensitivity analysis simulates expected GDP growth for different values of CHO deposits accepted. All other assumptions are the same as the base scenario.

Sensitivity Analysis	Base Scenario	Scenario A	Scenario B	Scenario C	Scenario D
Total Value of CHO Deposits accepted	\$2 billion	\$1.75 billion	\$1.5 billion	\$1.25 billion	\$1 billion
Potential Increase in Investment	\$1 billion	\$875 million	\$750 million	\$625 million	\$500 million
Potential Increase in Consumption	\$20 million	\$17.5 million	\$15 million	\$12.5 million	\$10 million
Potential Increase in Government Revenues	\$2 million	\$1.75 million	\$1.5 million	\$1.25 million	\$1 million
Potential Increase in Economic Activity	\$1.022 billion	\$894.25 million	\$766.5 million	\$638.75 million	\$511 million
Expected GDP Growth	2%	1.7%	1.5%	1.2%	1.0%

- It should be noted that, in addition to government revenues generated from the taxation of CHO fees, the government will also generate additional revenues as a byproduct of economic growth. This is due to the fact that investment and consumption levels are expected to rise, and therefore the government will collect additional revenues from taxing these increments.
- Between 2016 and 2018, the ratio of tax revenues to GDP in Lebanon was between %14 and %16.
- The table below estimates government revenues in each of the above scenarios, assuming a tax revenue/GDP ratio of %15.


Government Revenues	Base Scenario	Scenario A	Scenario B	Scenario C	Scenario D
Potential Increase in Economic Activity	\$1.022 billion	\$894.25 million	\$766.5 million	\$638.75 million	\$511 million
Tax revenues (as a % of GDP)	15%	15%	15%	15%	15%
Additional government revenues (from economic growth)	153,300,000	134,137,500	114,975,000	95,812,500	76,650,000
Additional government revenues (from taxation of CHO fees)	2,000,000	1,750,000	1,500,000	1,250,000	1,000,000
Total increase in Government Revenues	155,300,000	135,887,500	116,475,000	97,062,500	77,650,000



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